

**COMPACT WELL SHUTTLE
MICRO IMAGER**

COMPANY: **EOG RESOURCES, INC.**
 WELL: **CRITTER CREEK 2-03H**
 FIELD: **WILDCAT**
 PROVINCE/COUNTY: **WELD**
 COUNTRY/STATE: **U.S.A. / COLORADO**
 LOCATION: **SHL: 600' FSL & 600' FEL**
BHL: 2400' FNL & 600' FWL

COMPACT

SEC: 3 TWP: 1N RGE: 63W Other Services: MAI
 API Number: 05-123-31047
 Permit Number: _____
 Permanent Datum G.L., Elevation 5272 feet
 Log Measured From K.B. @ 21 FEET above Permanent Datum
 Drilling Measured From K.B.

Elevations: feet
 KB 5293.00
 DF 5292.00
 GL 5272.00

Date	29-MAR-2010	
Run Number	ONE	
Depth Driller	11845.00	feet
Depth Logger	11845.00	feet
First Reading	12783.00	
Last Reading	7589.00	
Casing Driller	7582.00	feet
Casing Logger	7589.00	feet
Bit Size	6.000	inches
Hole Fluid Type	GEL/POLY	
Density / Viscosity	8.40 lb/USg	30.00 CP
PH / Fluid Loss	7.80	30.00 ml/30Min
Sample Source	FLOWLINE	
Rm @ Measured Temp	3.83 @ 79.2	ohm-m
Rmf @ Measured Temp	3.06 @ 79.2	ohm-m
Rmc @ Measured Temp	4.60 @ 79.2	ohm-m
Source Rmf / Rmc	CALC	CALC
Rm @ BHT	1.36 @228.0	ohm-m
Time Since Circulation	1 HOUR	
Max Recorded Temp	228.00	deg F
Equipment Name	COMPACT	
Equipment / Base	18005	RK SPR
Recorded By	M. GOODMAN	
Witnessed By	K. HATFIELD	B. ROSSER
Last Title	Last Line	Last Line

BOREHOLE RECORD Last Edited: 30-MAR-2010 12:15

Bit Size inches	Depth From feet	Depth To feet
6.000	7852.00	11845.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
Surface	9.625	0.00	1373.00	36.00
Intermed	7.000	1373.00	7852.00	23.00

REMARKS

SOFTWARE VERSION USED: WLS 10.07.0791.

SHL: LATITUDE: 40.56 DEG 56' 44.88"
 SHL: LONGITUDE: 104.24 DEG 24' 42.44"

TOOLS CONVEYED VIA CML WELL SHUTTLE.

ALL DEPTHS RECORDED WITH WEATHERFORD ADVANTAGE SYSTEM.
 ALL DEPTHS CORRECTED TO DRILLER'S STRAP DEPTH.

MAI, MIE AND MCG RUN IN COMBINATION.

HARDWARE USED: SEE TOOL DIAGRAM.

CUSTOMER'S SCALES USED AND INTERVALS LOGGED.

4.5 INCH PRODUCTION CASING USED TO CALCULATE ANNULAR HOLE VOLUME.
 ANNULAR HOLE VOLUME: 387 CUBIC FEET

HOLE VOLUME: 890 CUBIC FEET

BOREHOLE SIZE AND RUGOSITY WILL AFFECT DATA QUALITY.

OPERATOR(S): M. DEBBAN

RIG: SST 56

SERVICE ORDER #3505014

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

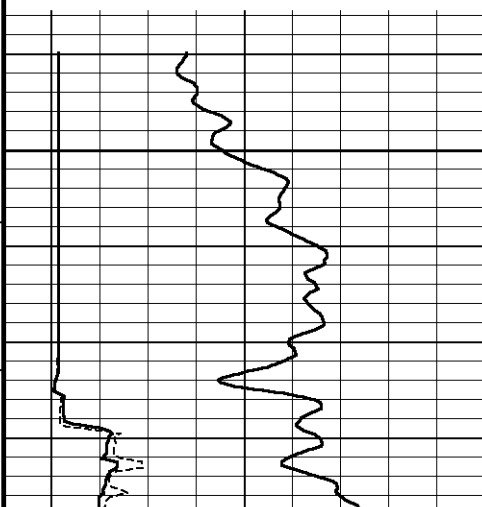
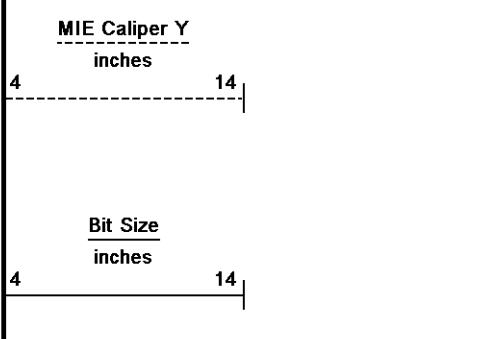
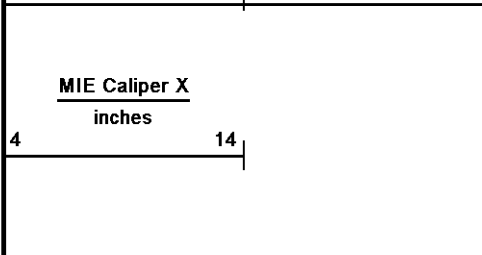
5 INCH DYNAMIC MAIN LOG

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 02-JUL-2010 10:10
Filename: C:\DOCUME~1\sailey\LOCALS~1\Temp\Weatherford ... \EOG Critter Creek 2-03H_Final.dta
Recorded on 30-MAR-2010 11:28
System Versions: Logged with 10.07.0791 Processed with 10.07.0791 Plotted with 8.01.0107

Timing Marks
every 60.0 sec

Gamma Ray

API		
0	75	150
+		
150	225	300



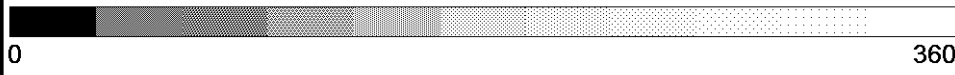
DSC
in
Feet

Borehole
Temp in
deg F

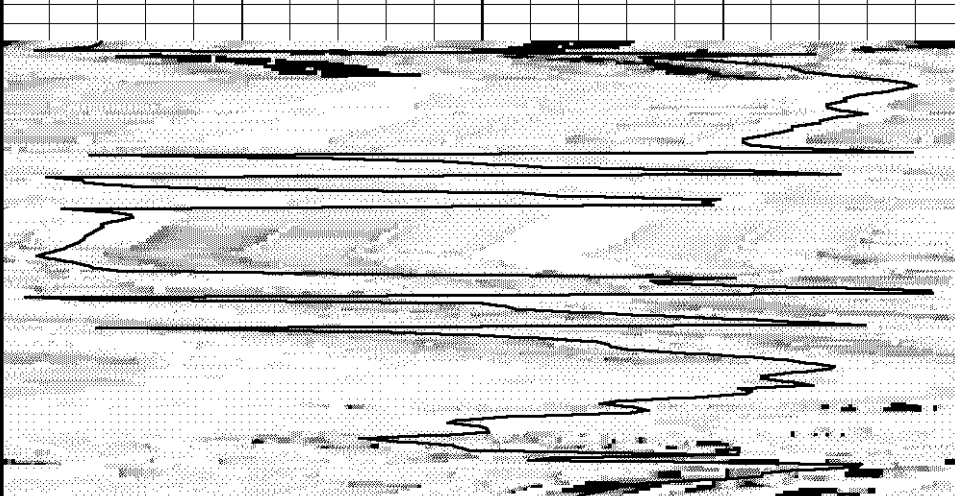
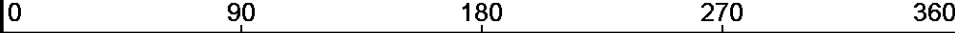
Replay
Scale
1:240

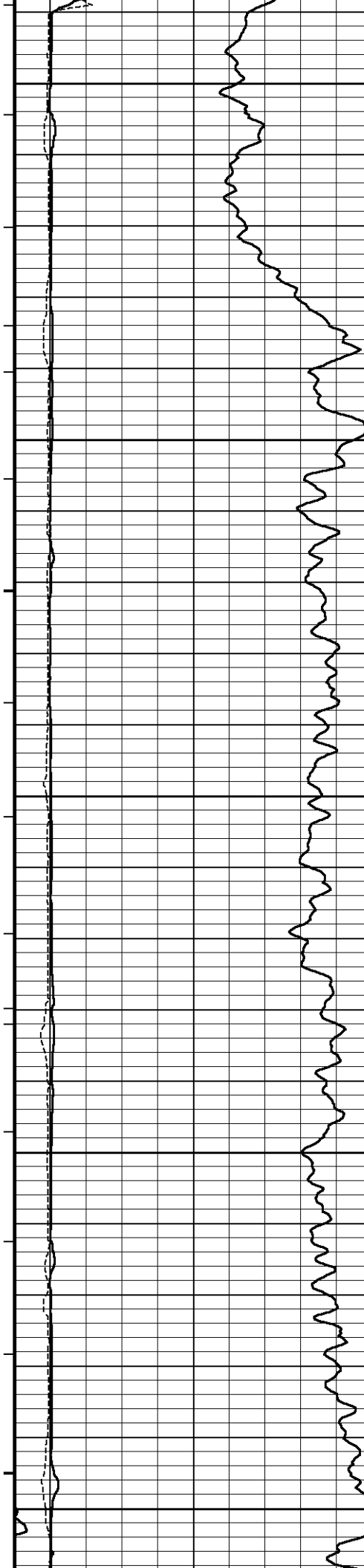
7538
7550
209°

MMI Image
ohm metres
+/- 1.5 Std Dev



Azimuth of Reference
degrees





7600

210°

7650

210°

7700

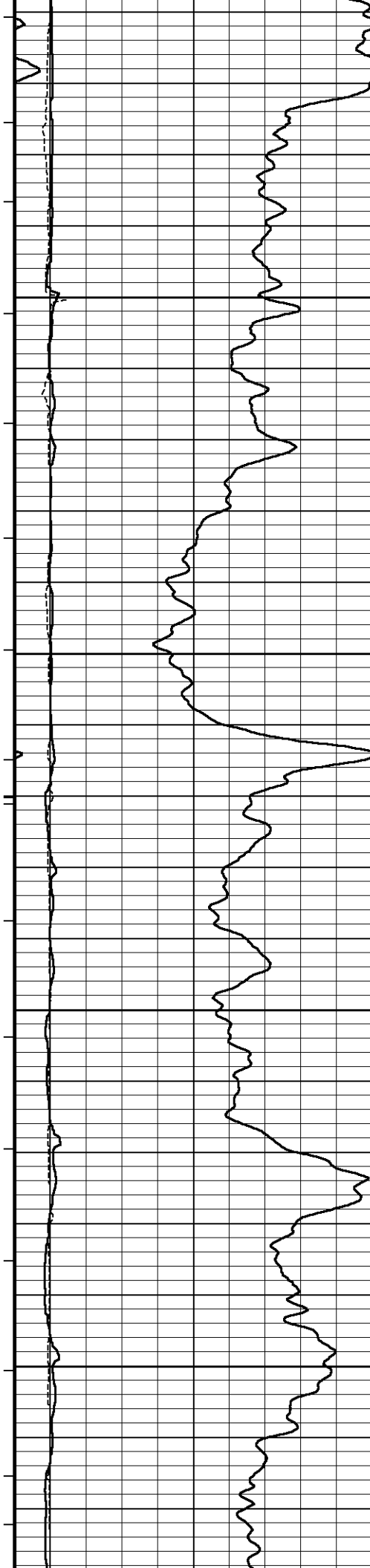
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7750

211°

7800





211°

7850

211°

7900

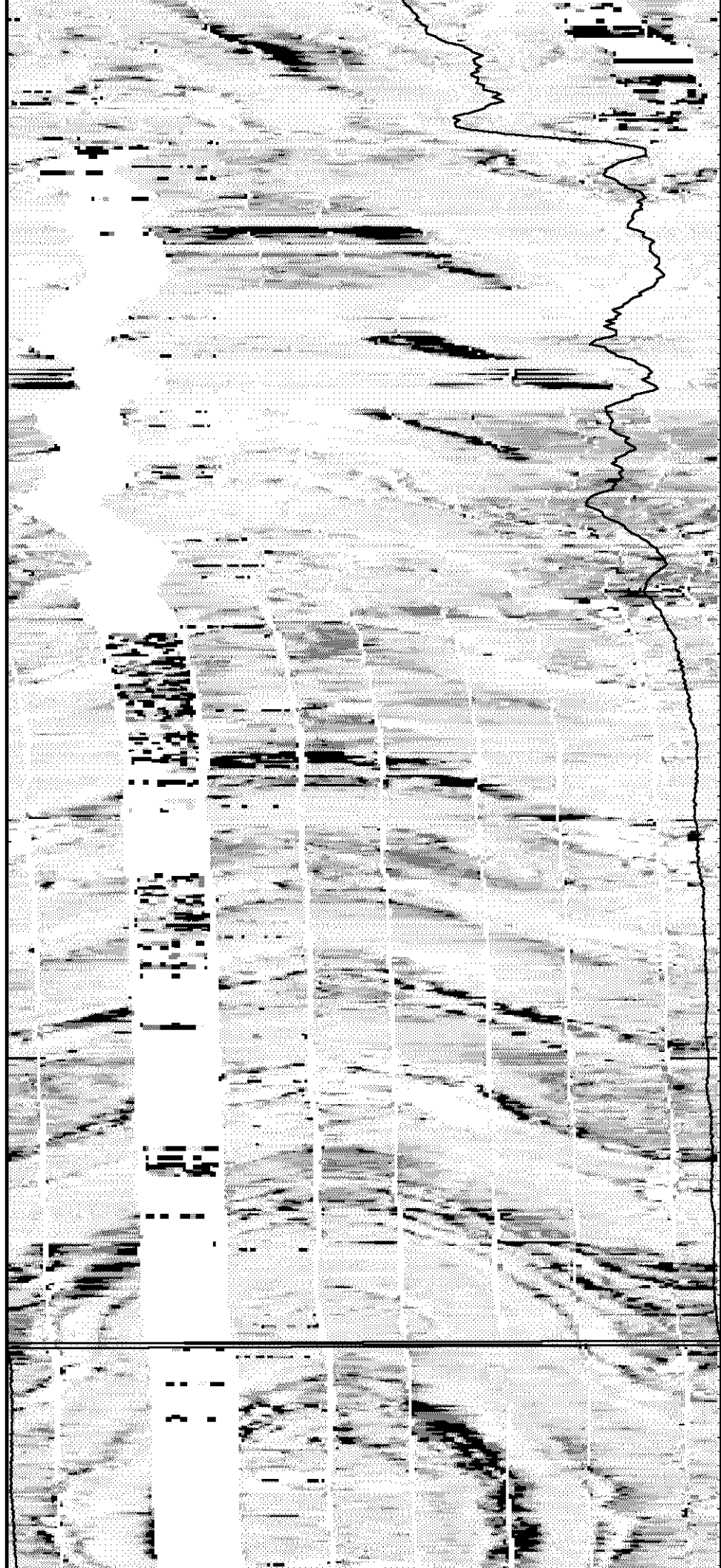
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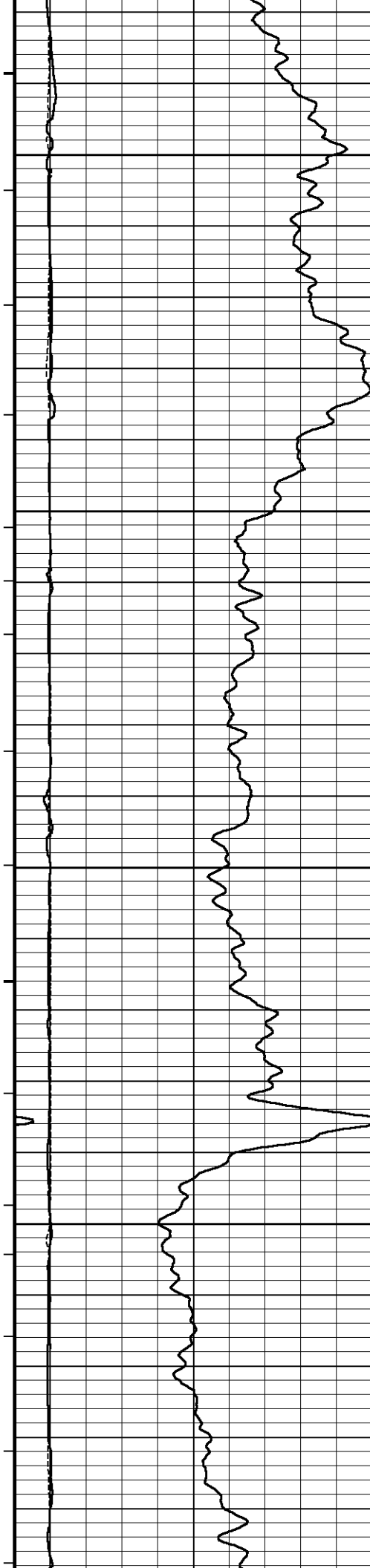
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8000

212°





8050

212°

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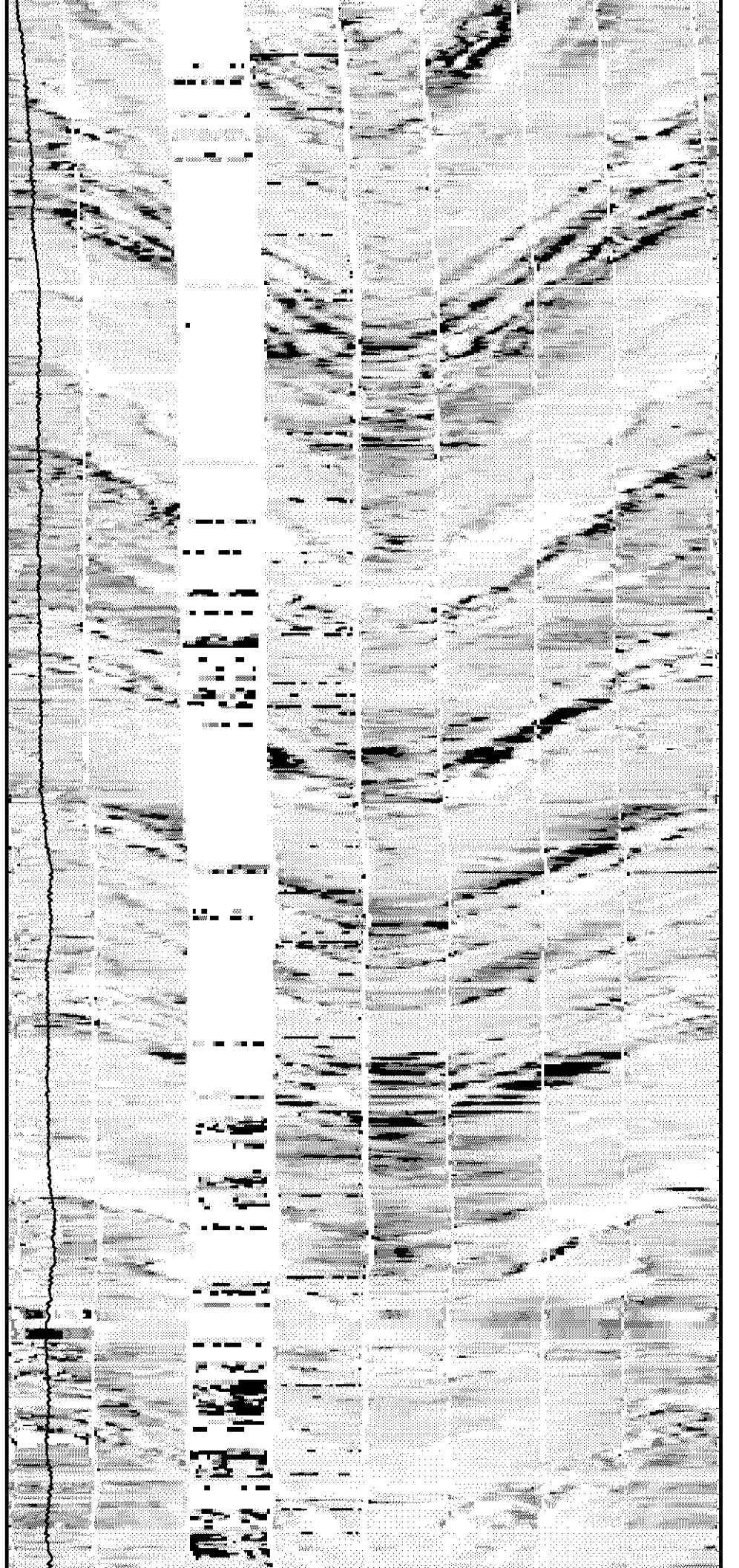
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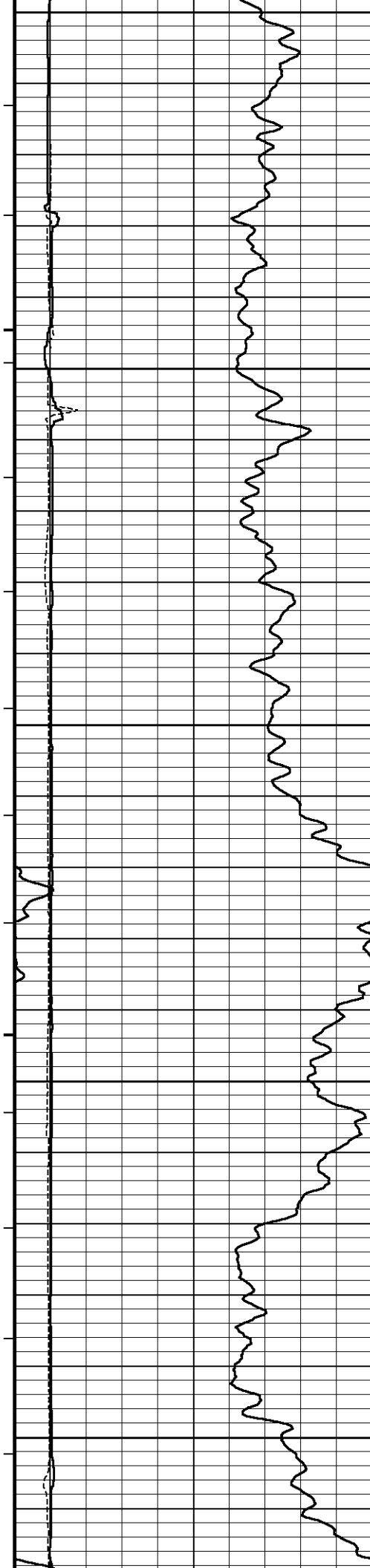
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213°

8200

213°





8250

213°

8300

214°

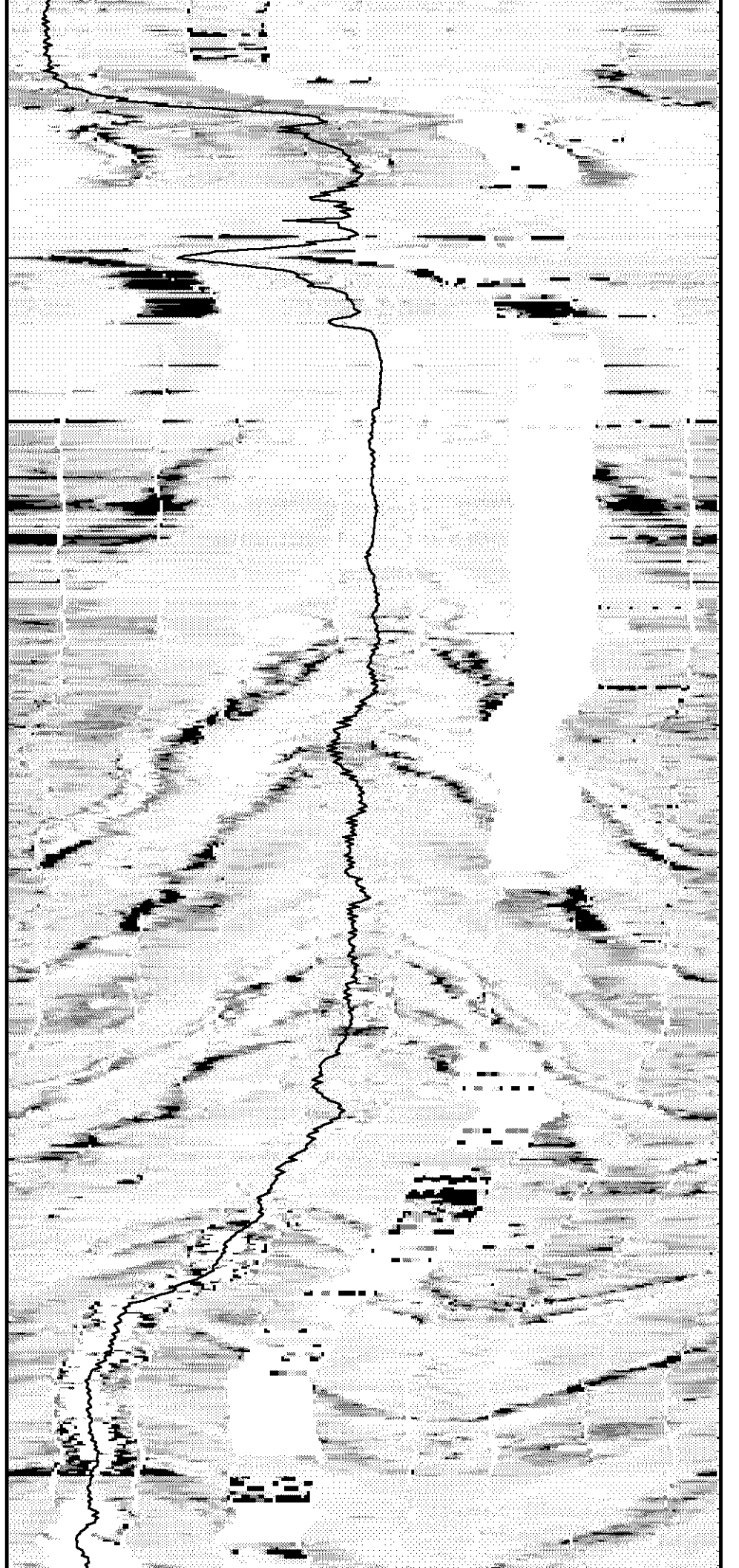
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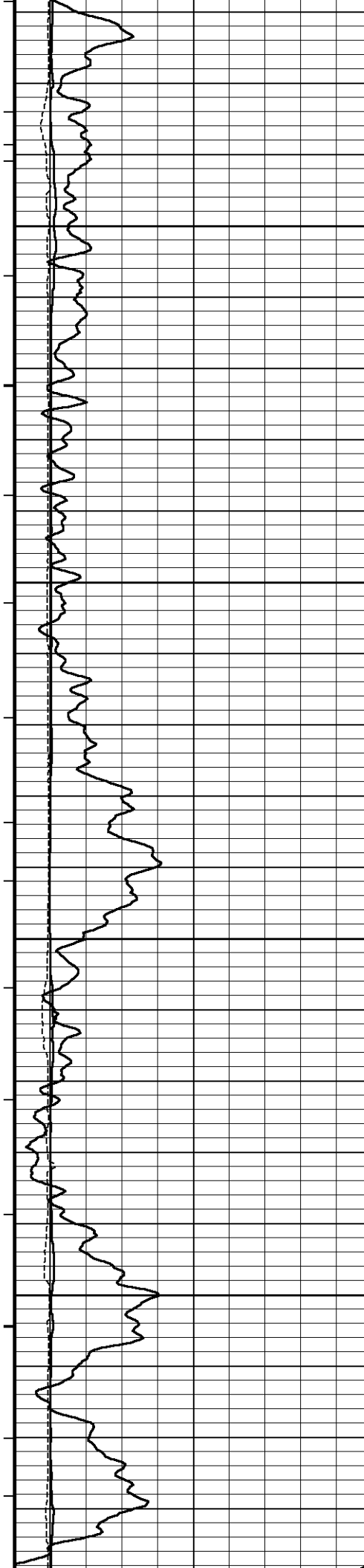
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214°

8500

214°

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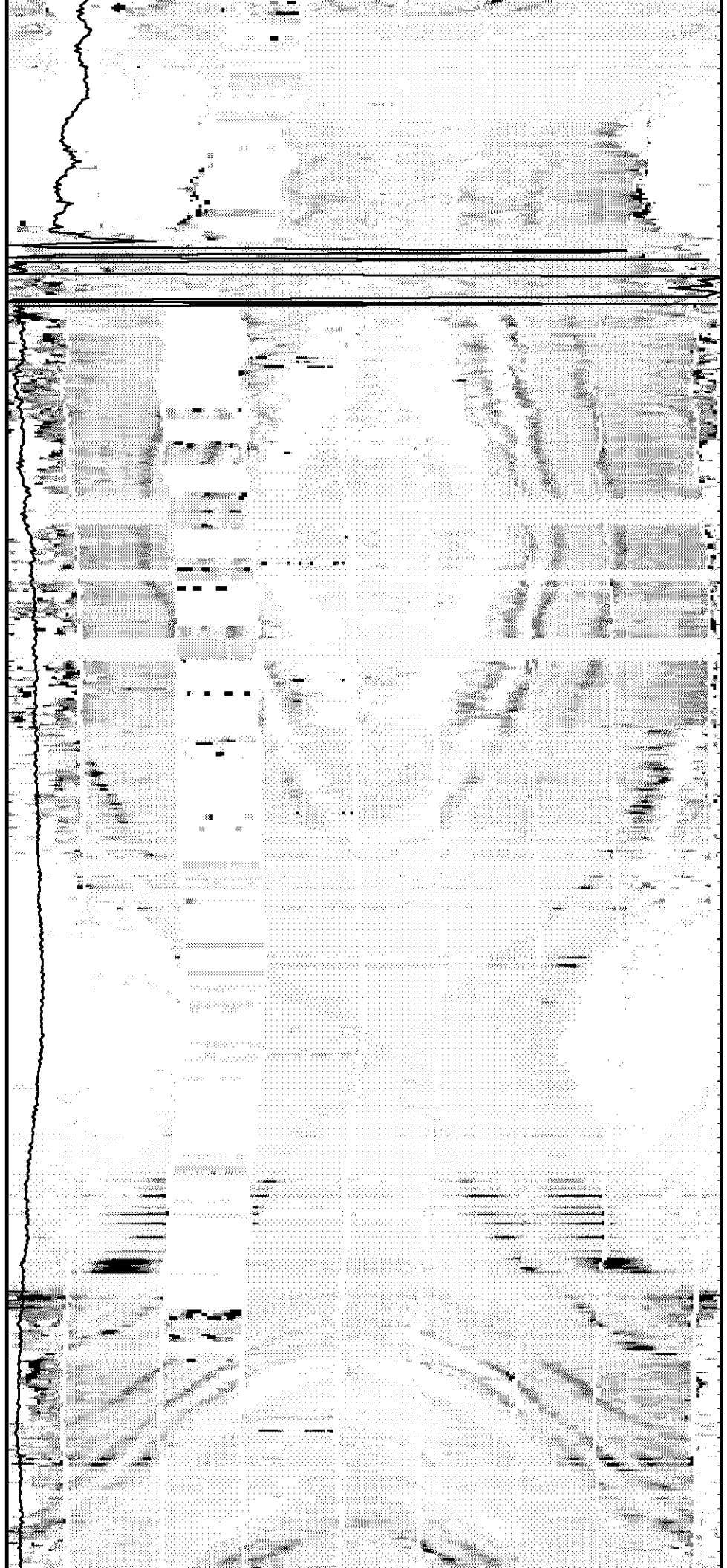
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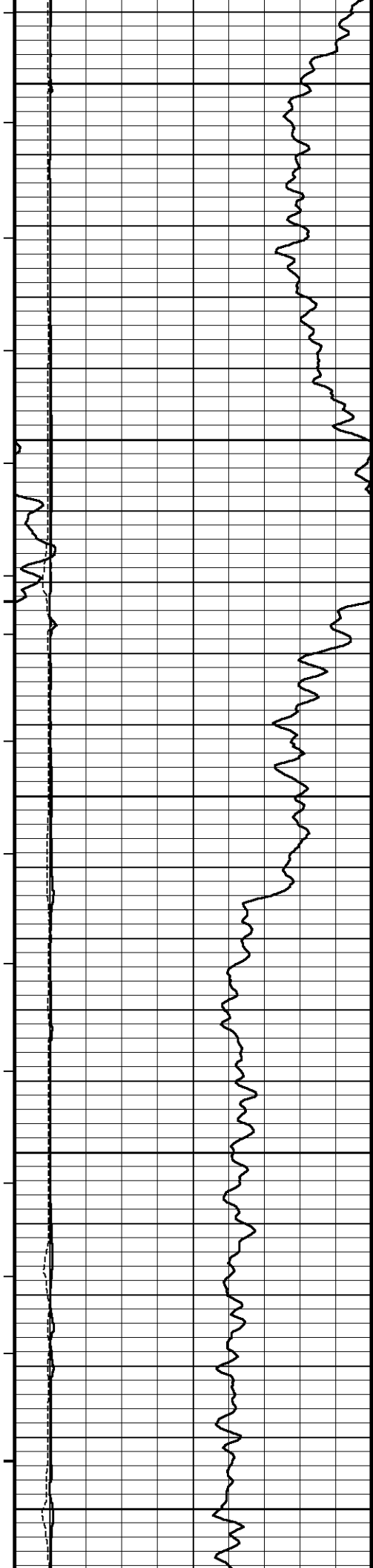
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215°

8650

216°





8700

216°

8750

216°

8800

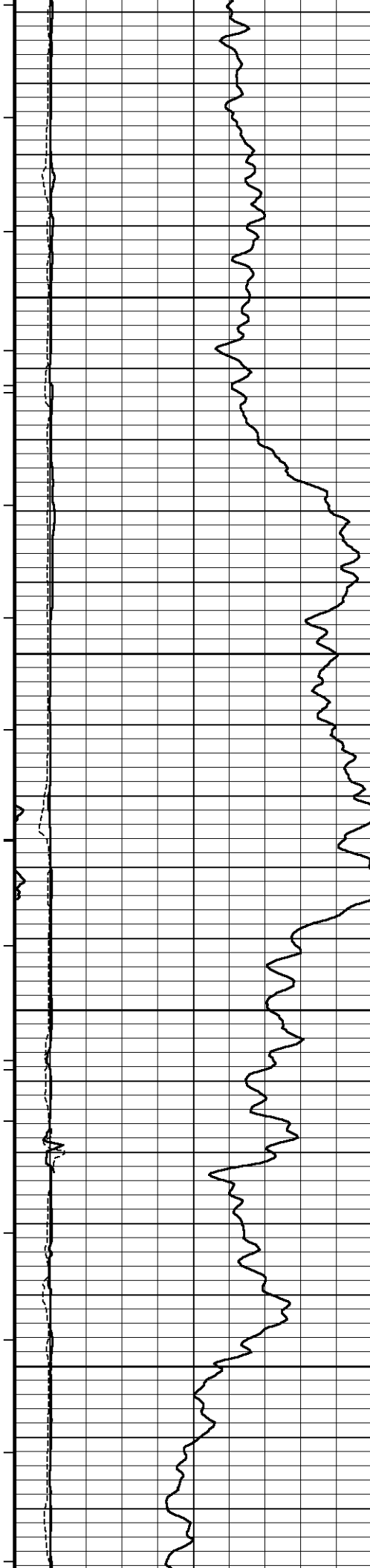
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217°

8900





217°

8950

217°

9000

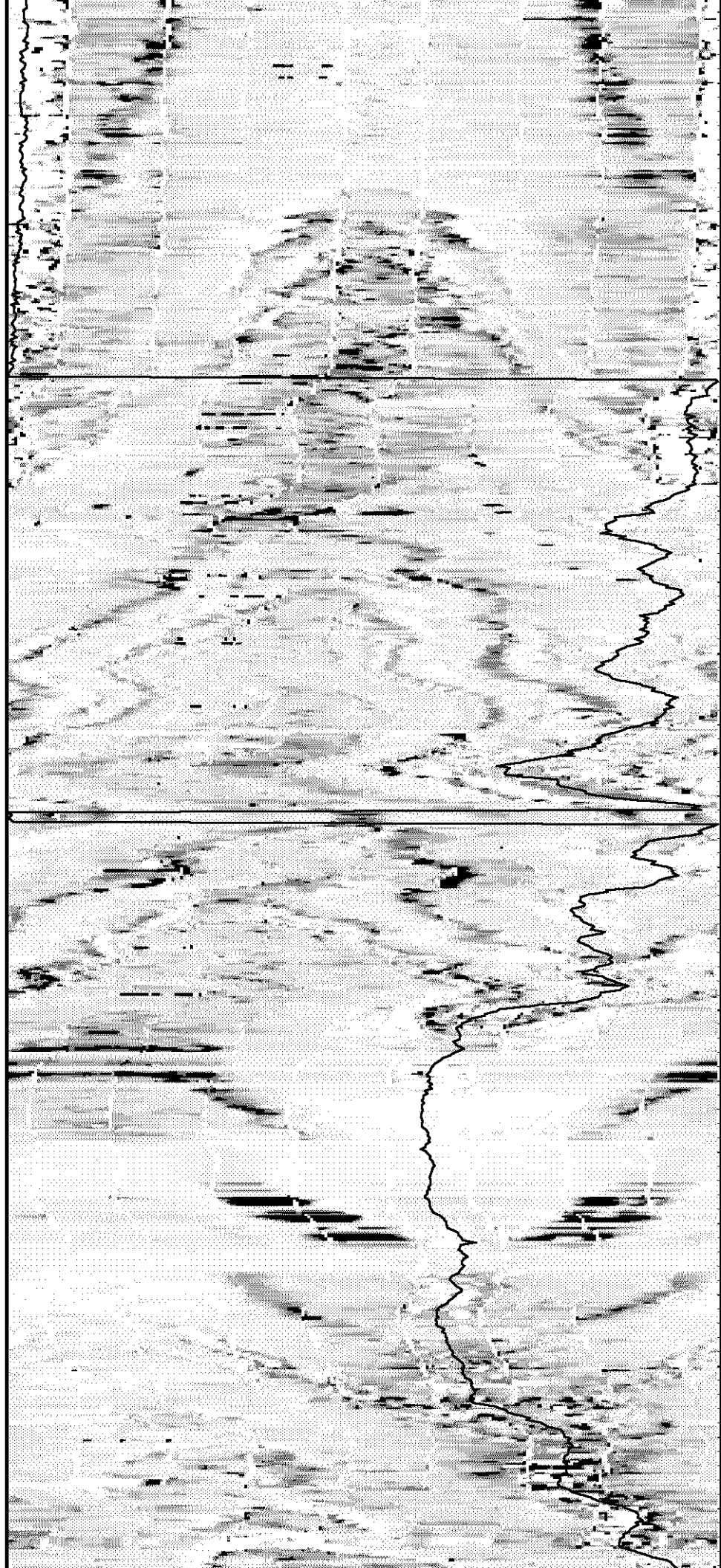
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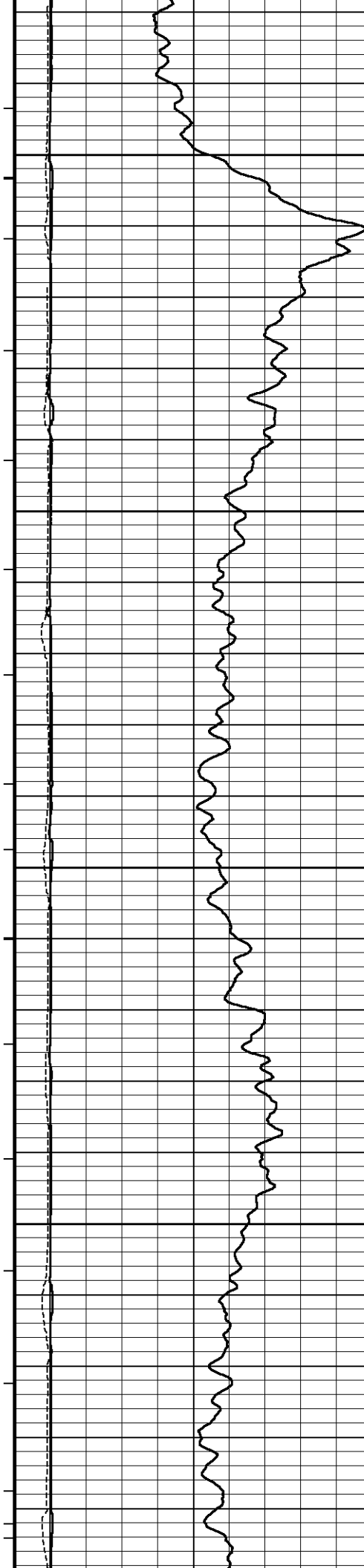
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218°

9100

218°





9150

218°

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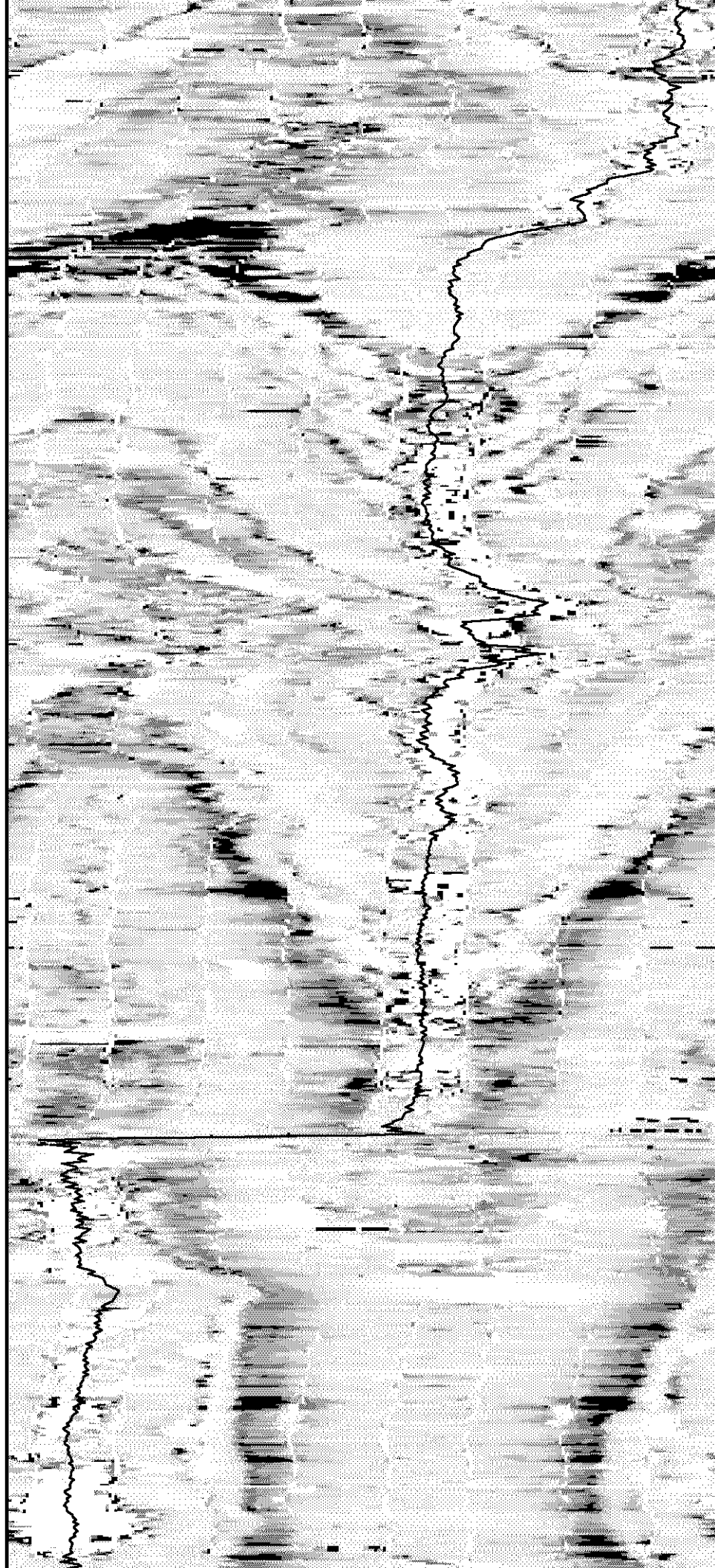
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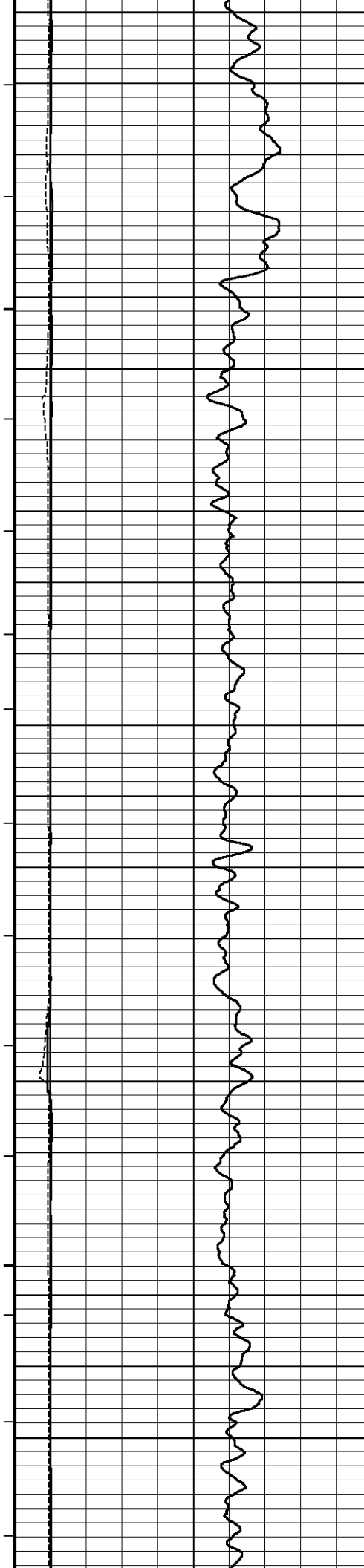
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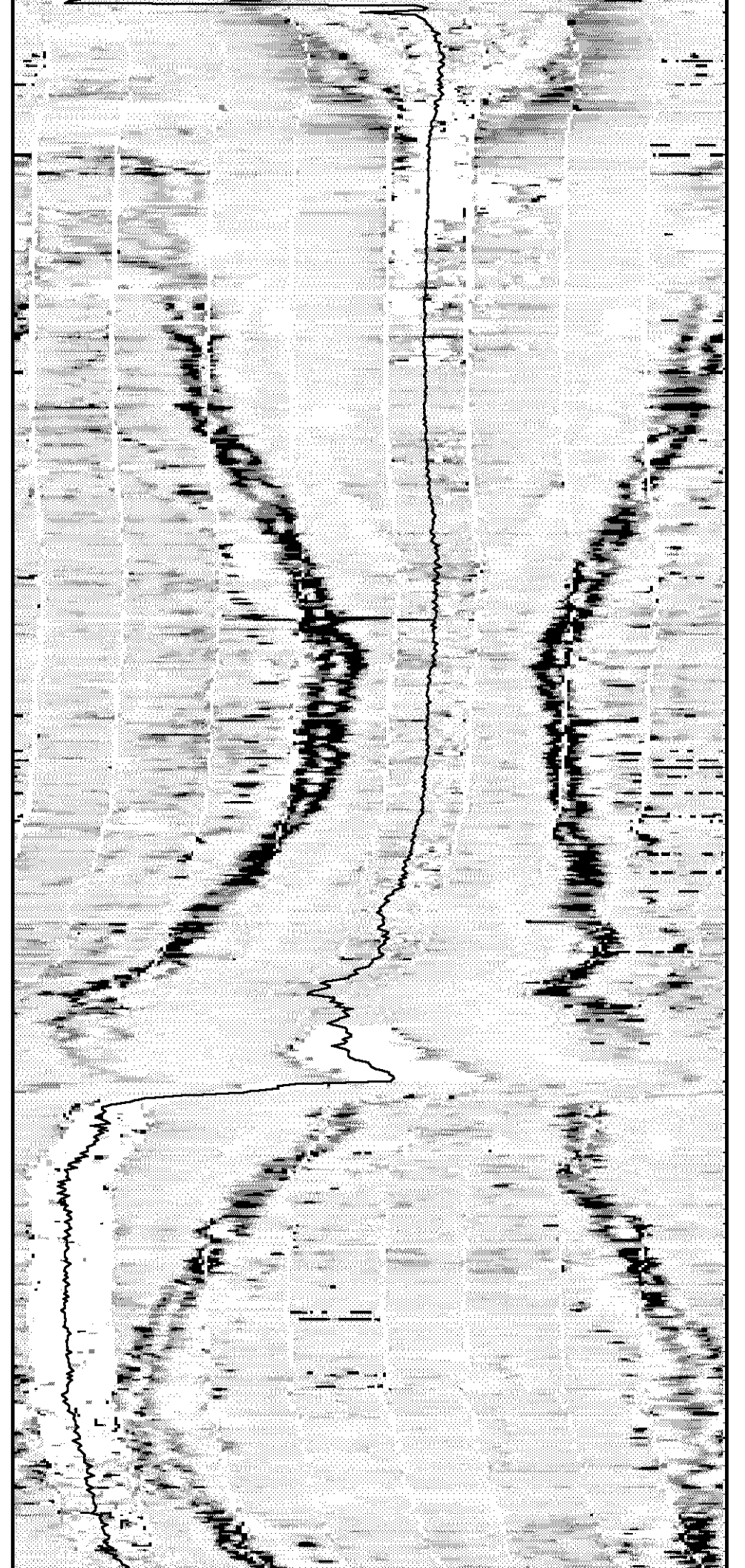
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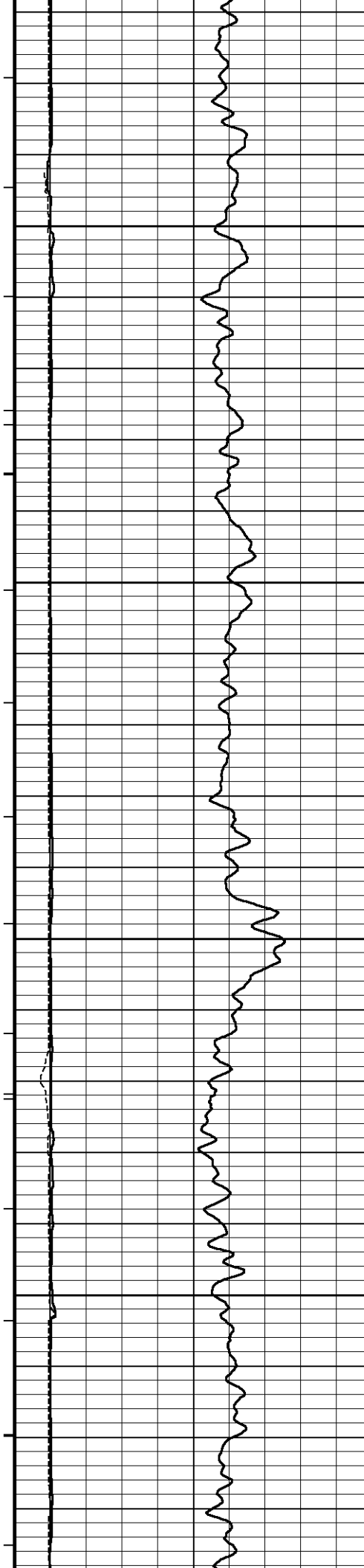
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9350
219°
9400
219°
9450
219°
9500
219°
9550





220°

9600

220°

9650

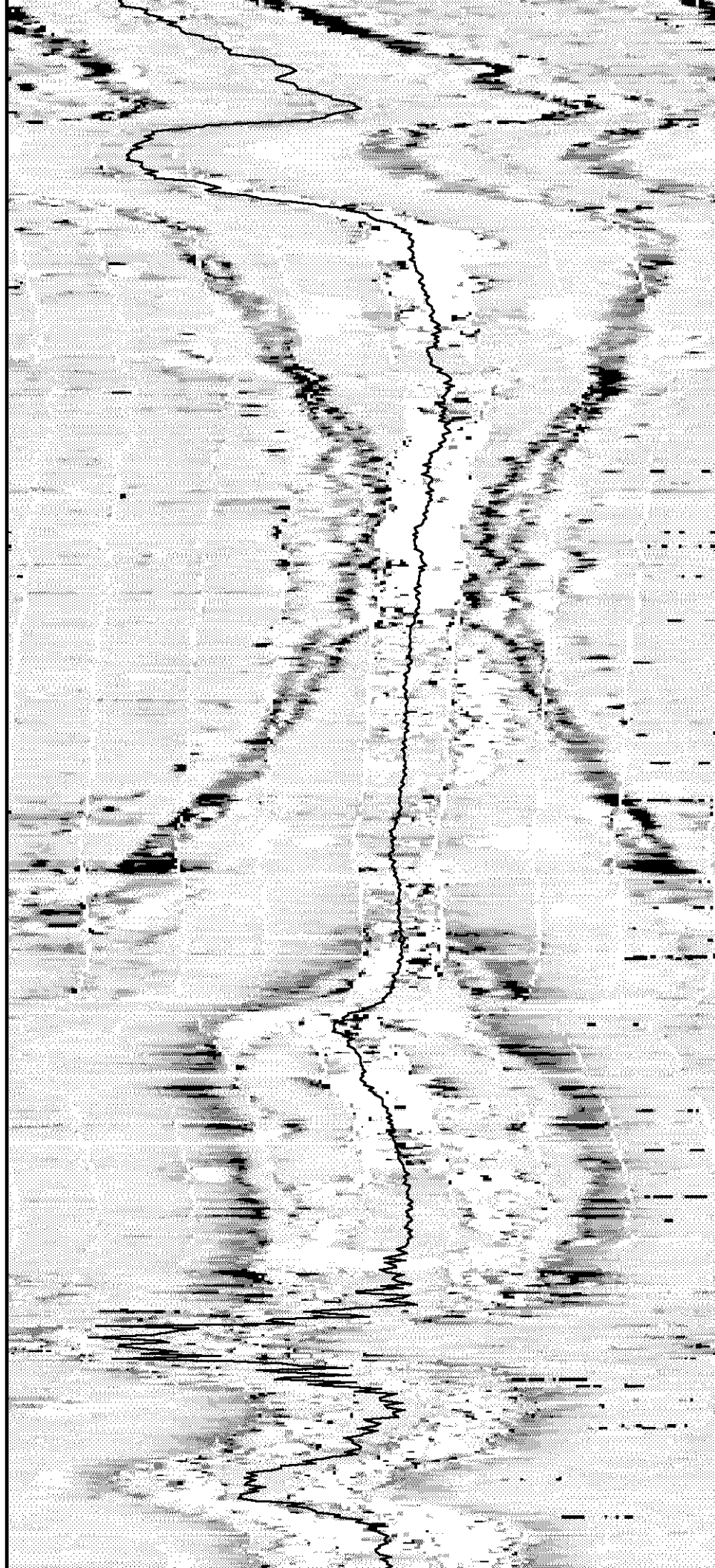
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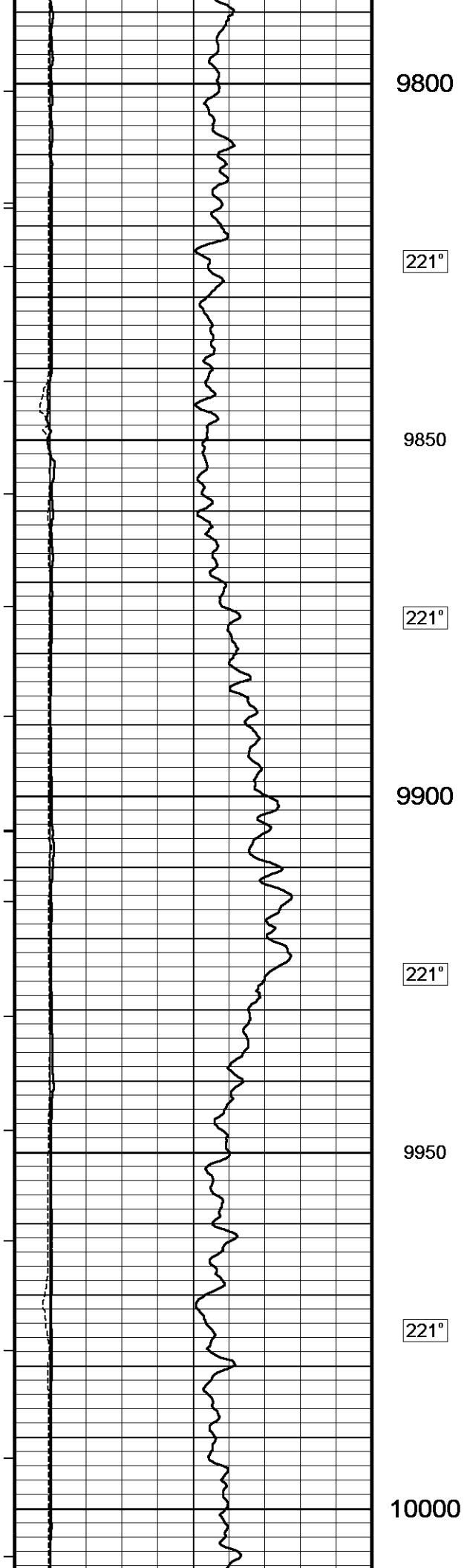
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220°

9750

221°





9800

221°

9850

221°

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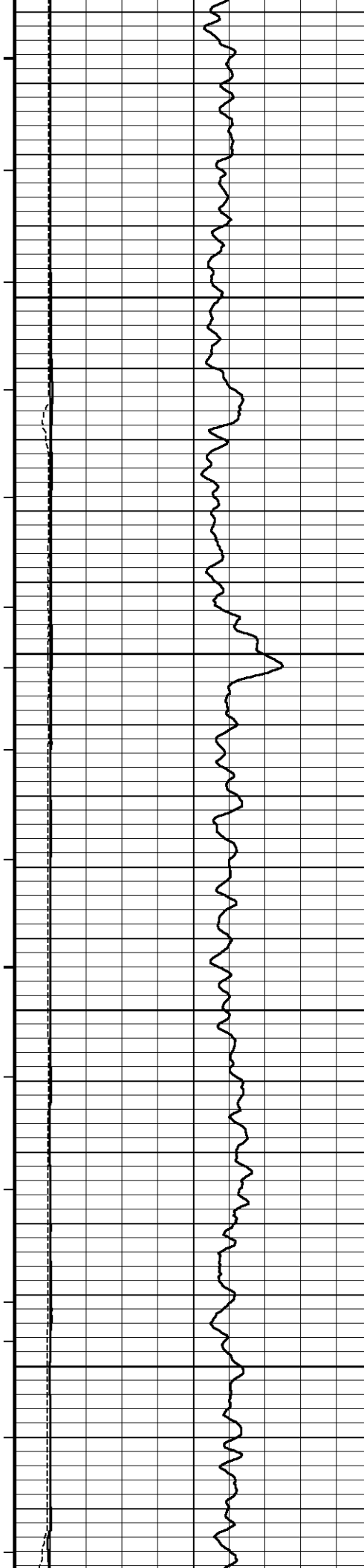
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221°

10000





221°

10050

221°

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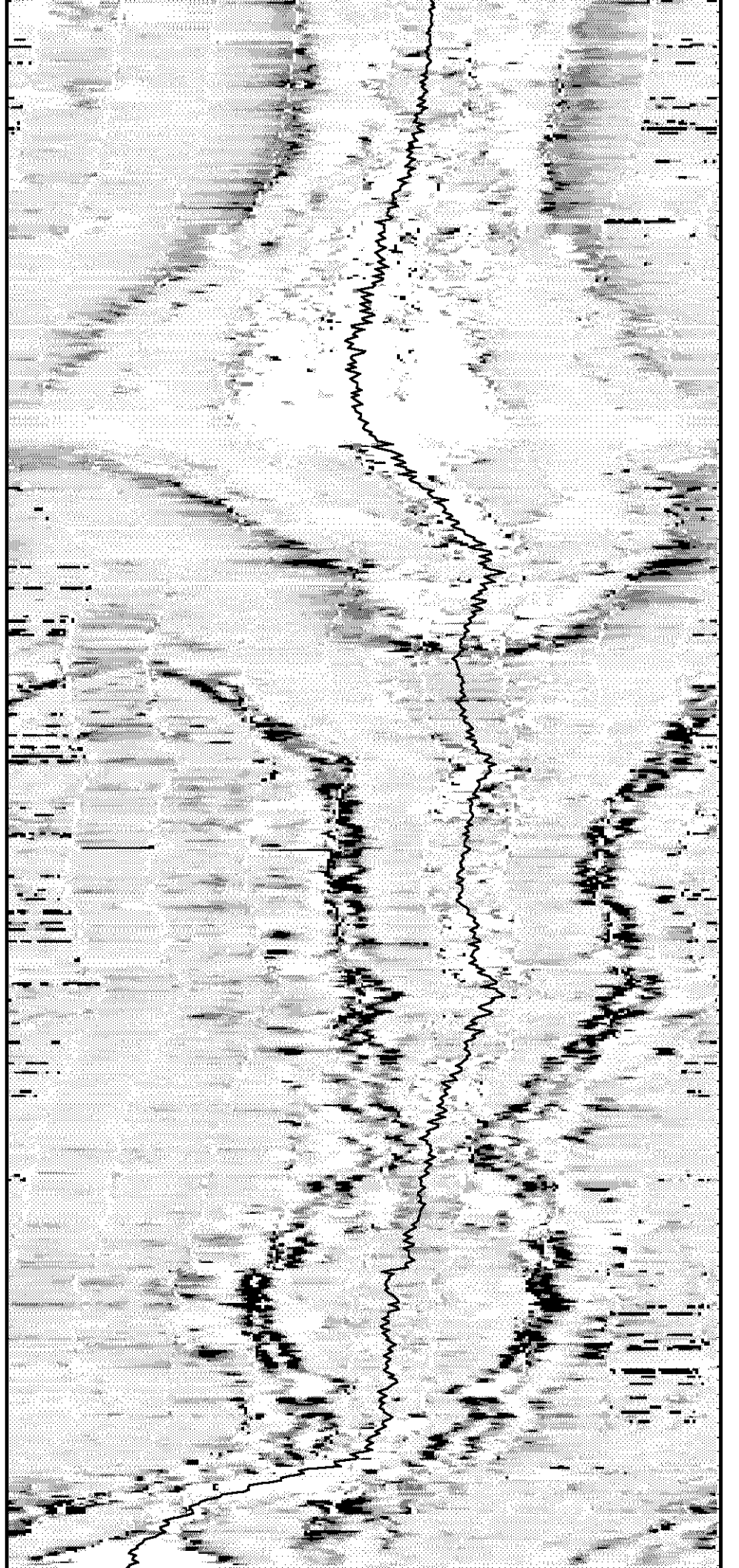
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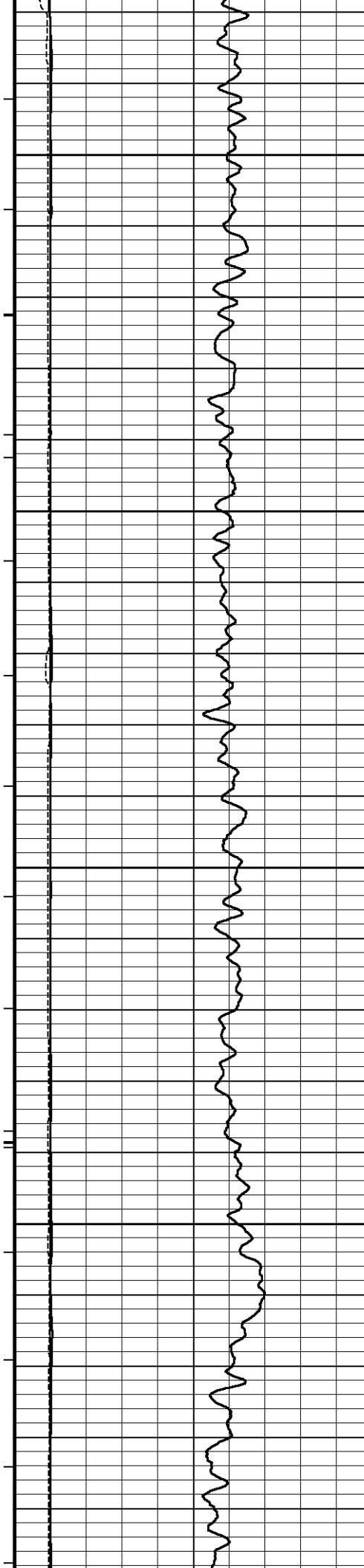
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10200

221°





10250

221°

10300

221°

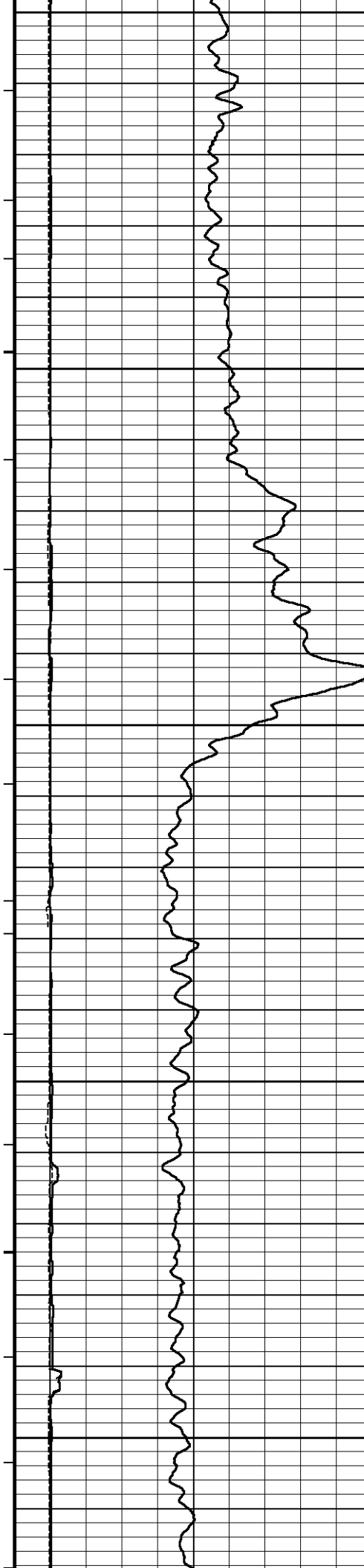
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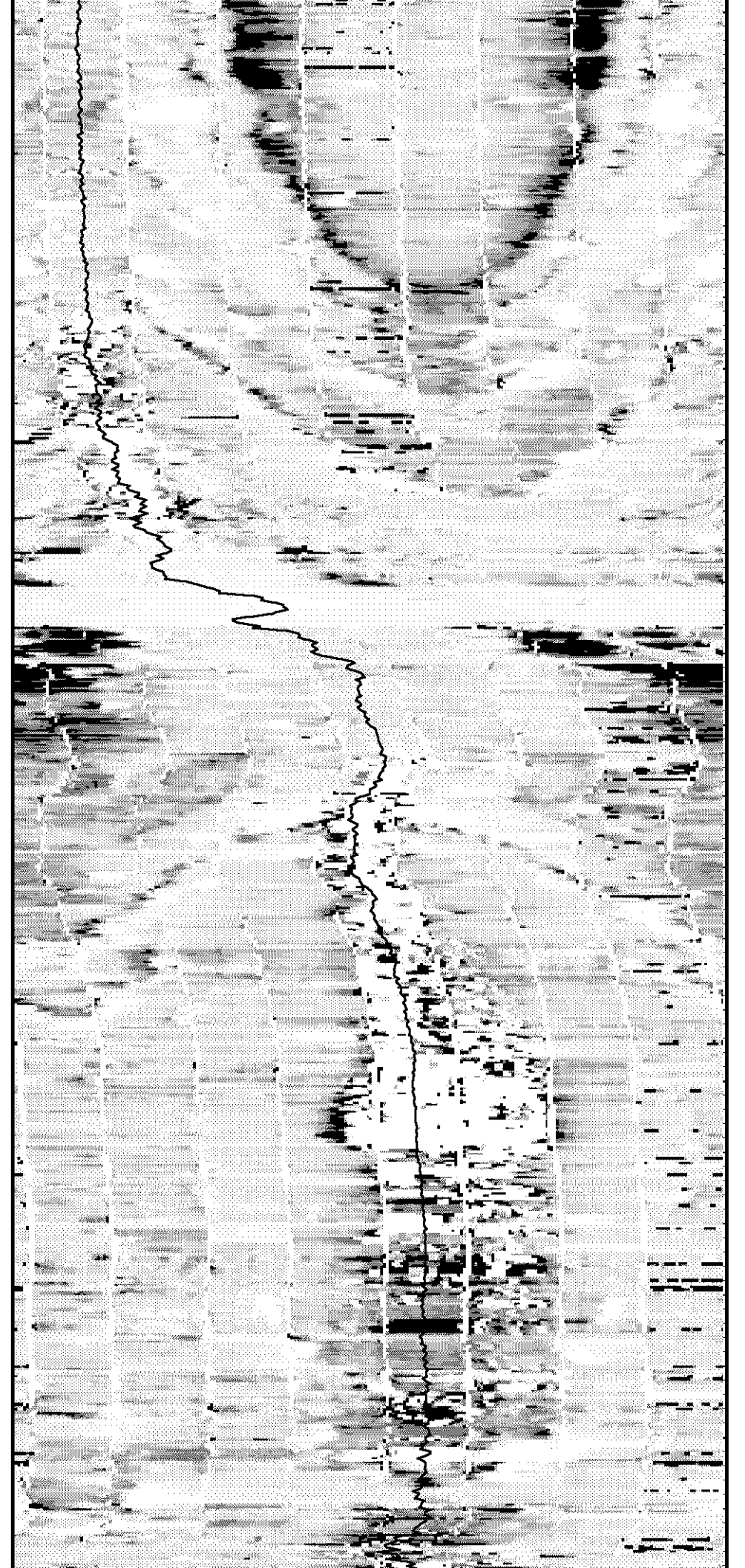
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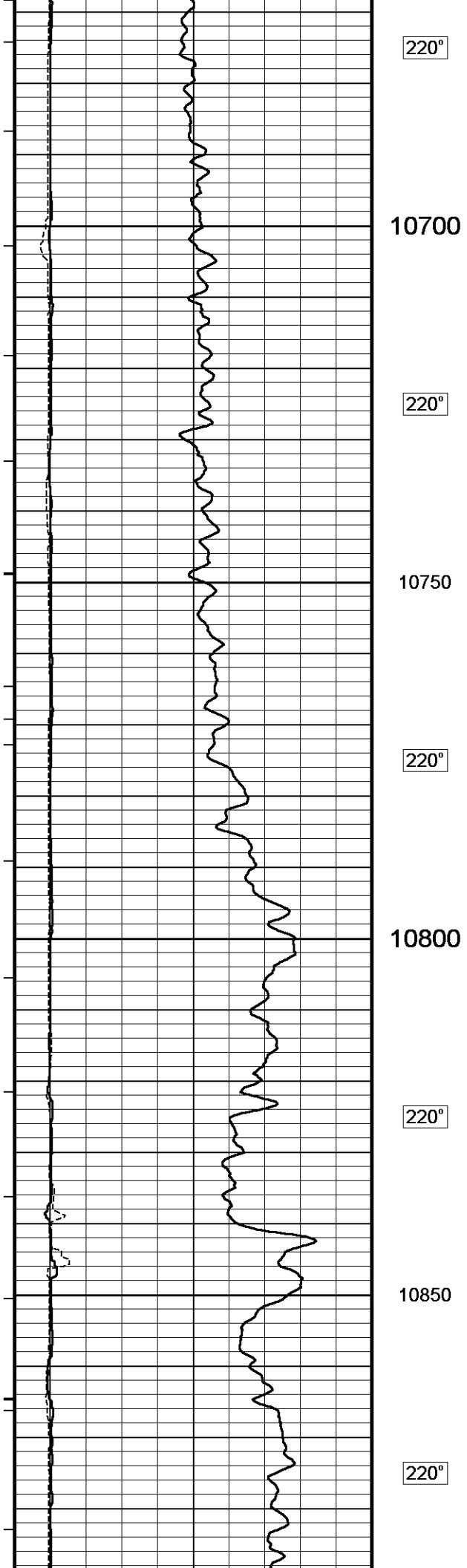
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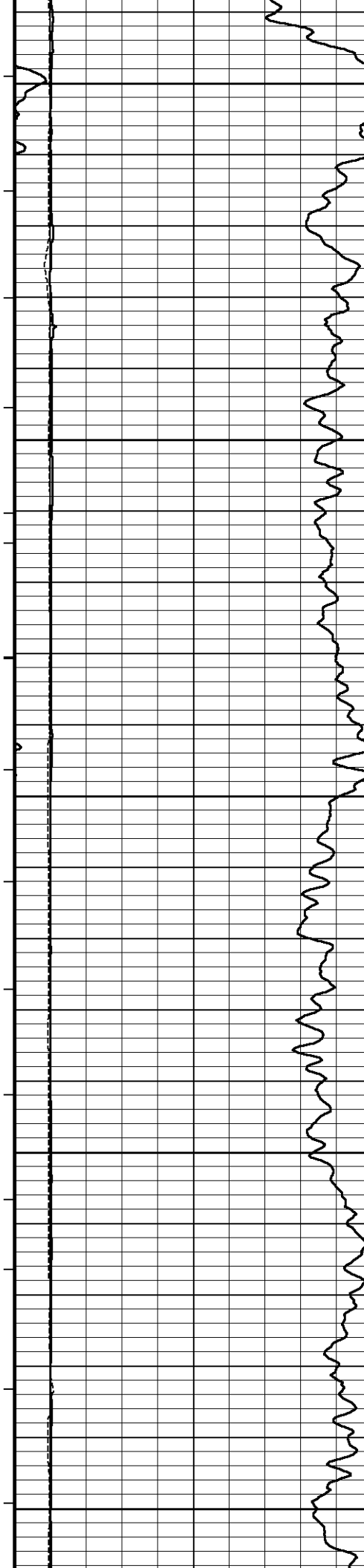




10450
221°
10500
220°
10550
221°
10600
220°
10650







10900

220°

10950

220°

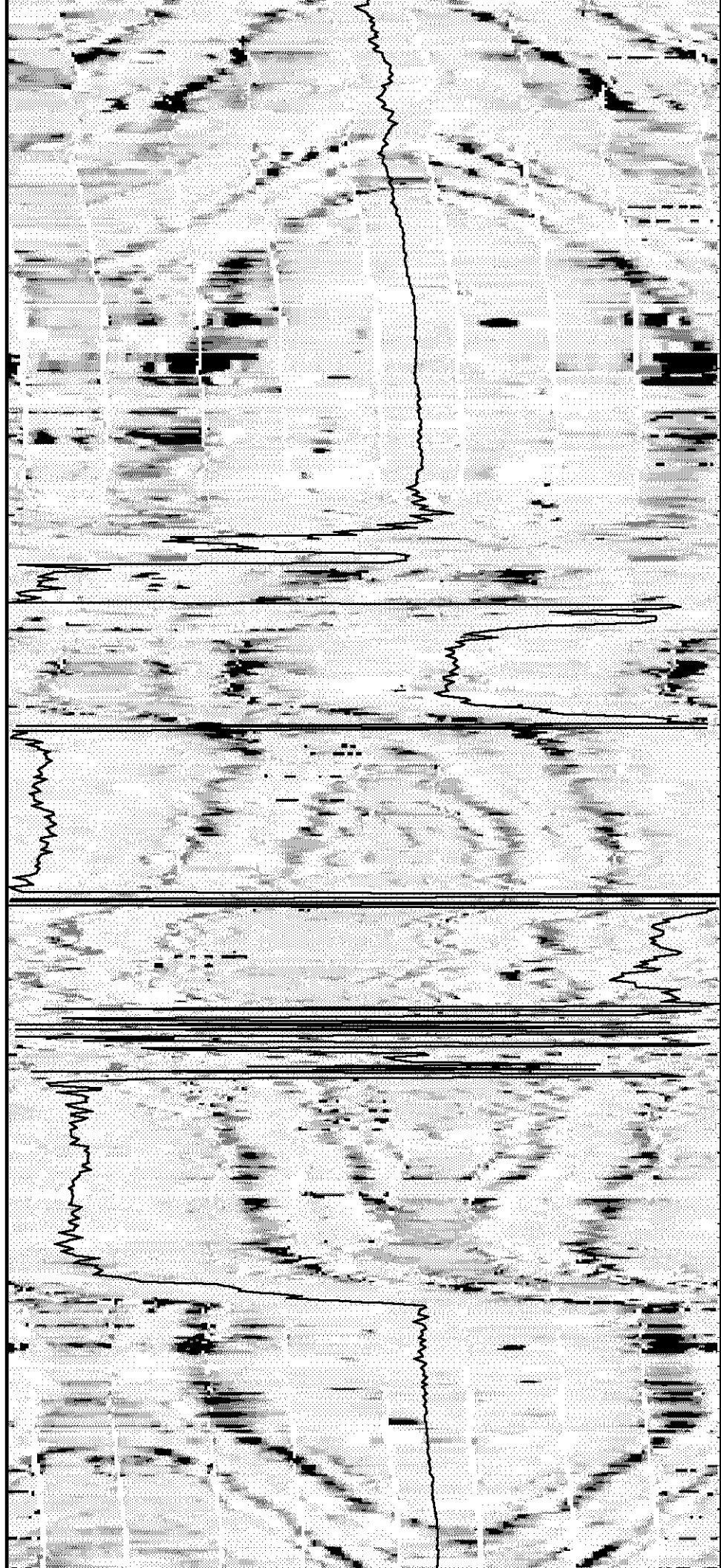
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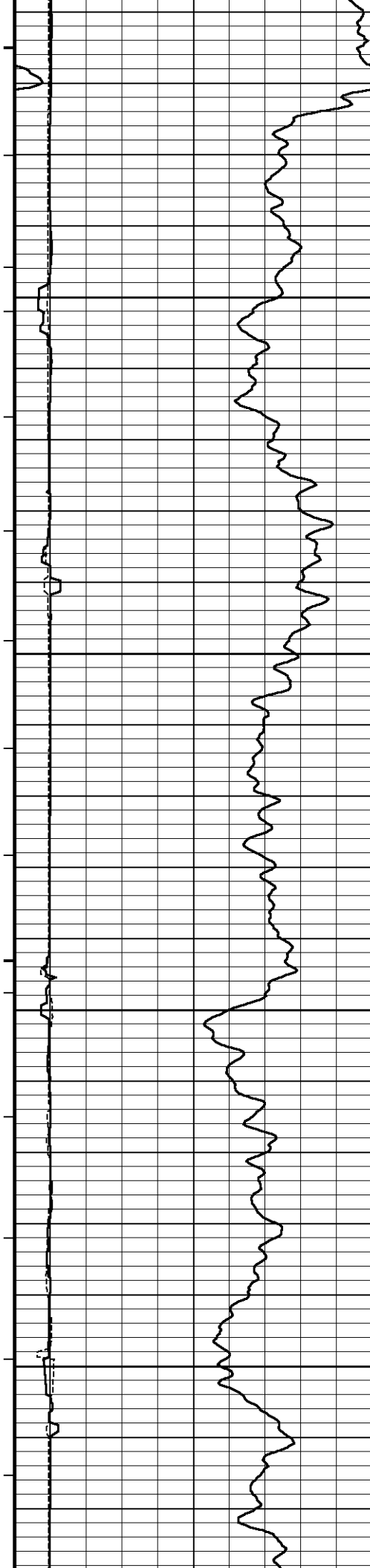
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11050

220°

11100





219°

11150

219°

11200

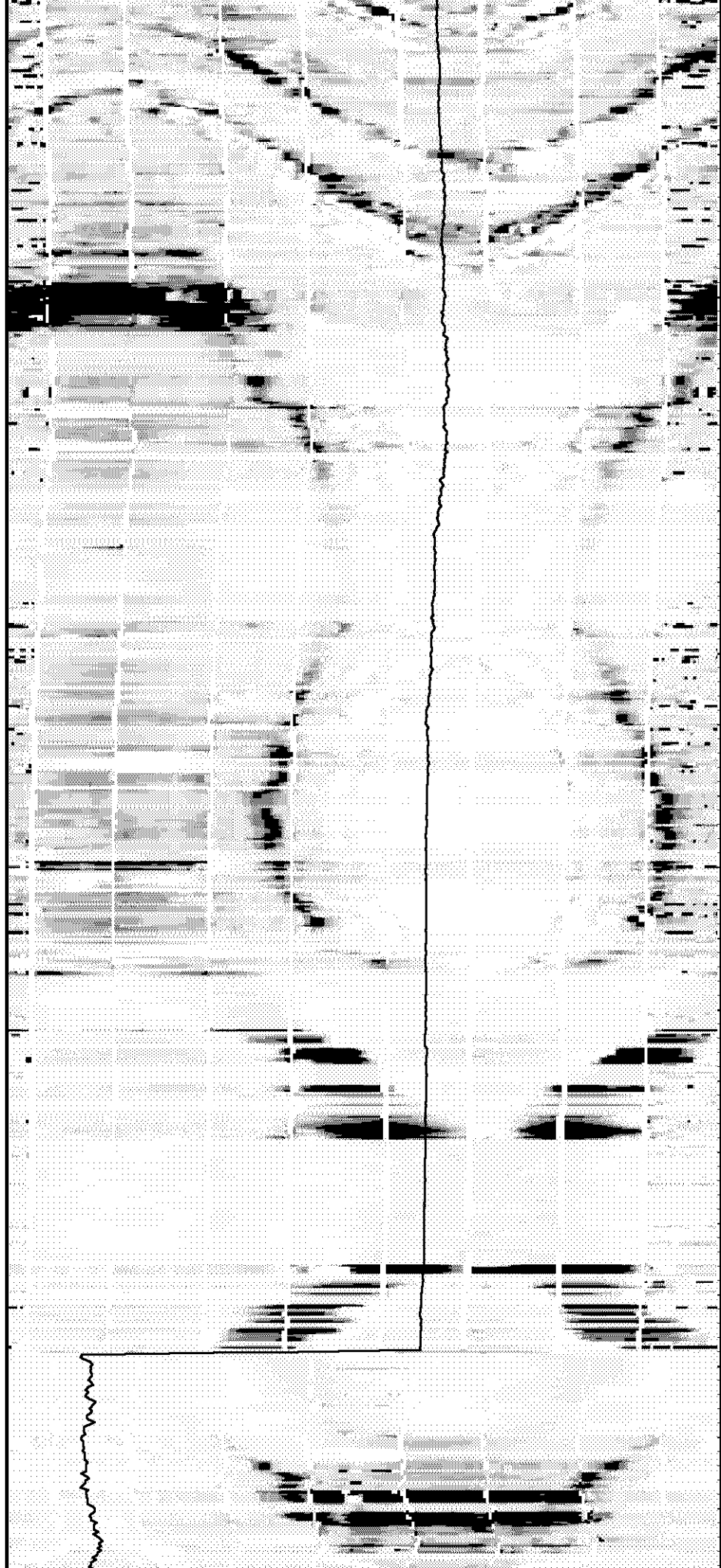
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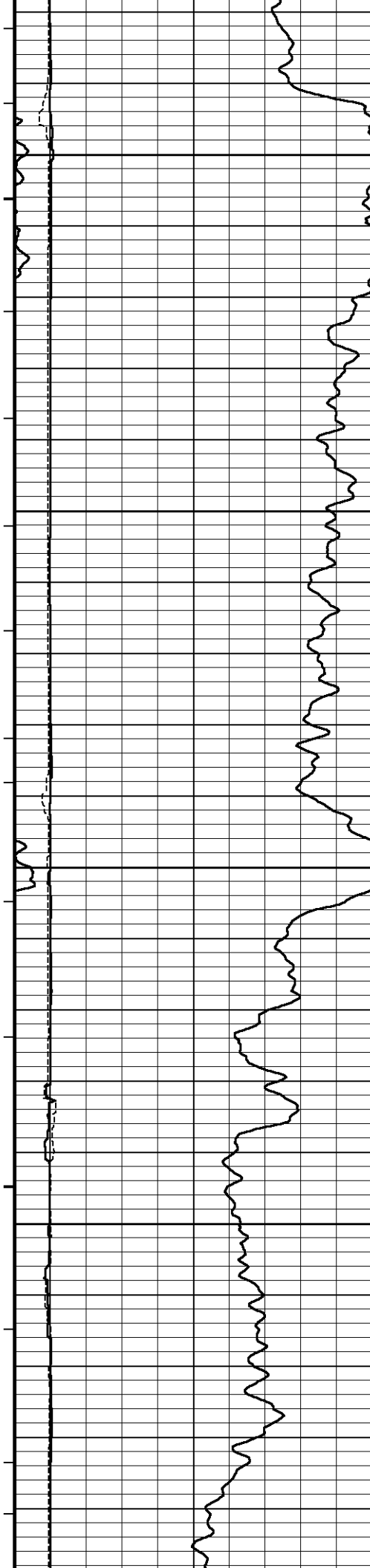
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11300

218°





11350

218°

11400

218°

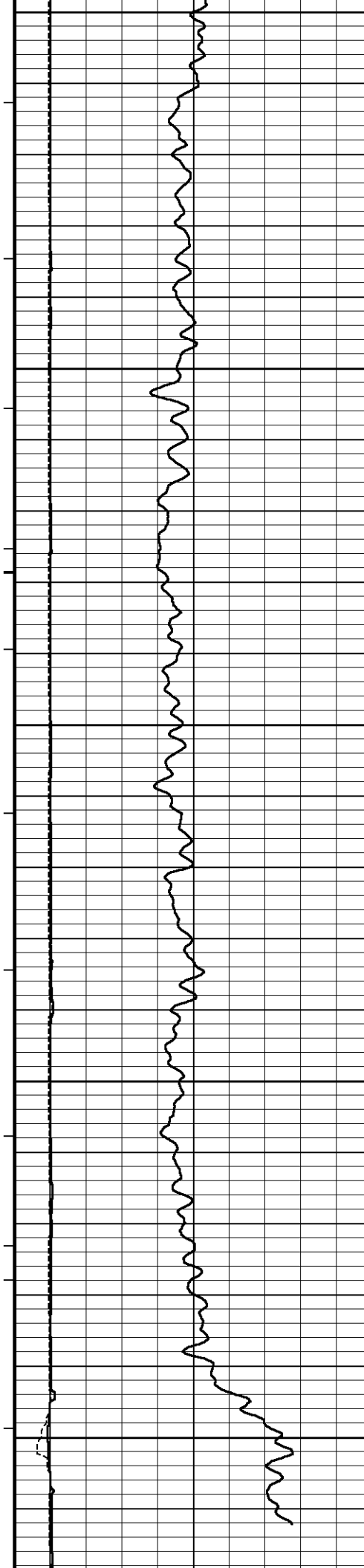
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11500

218°





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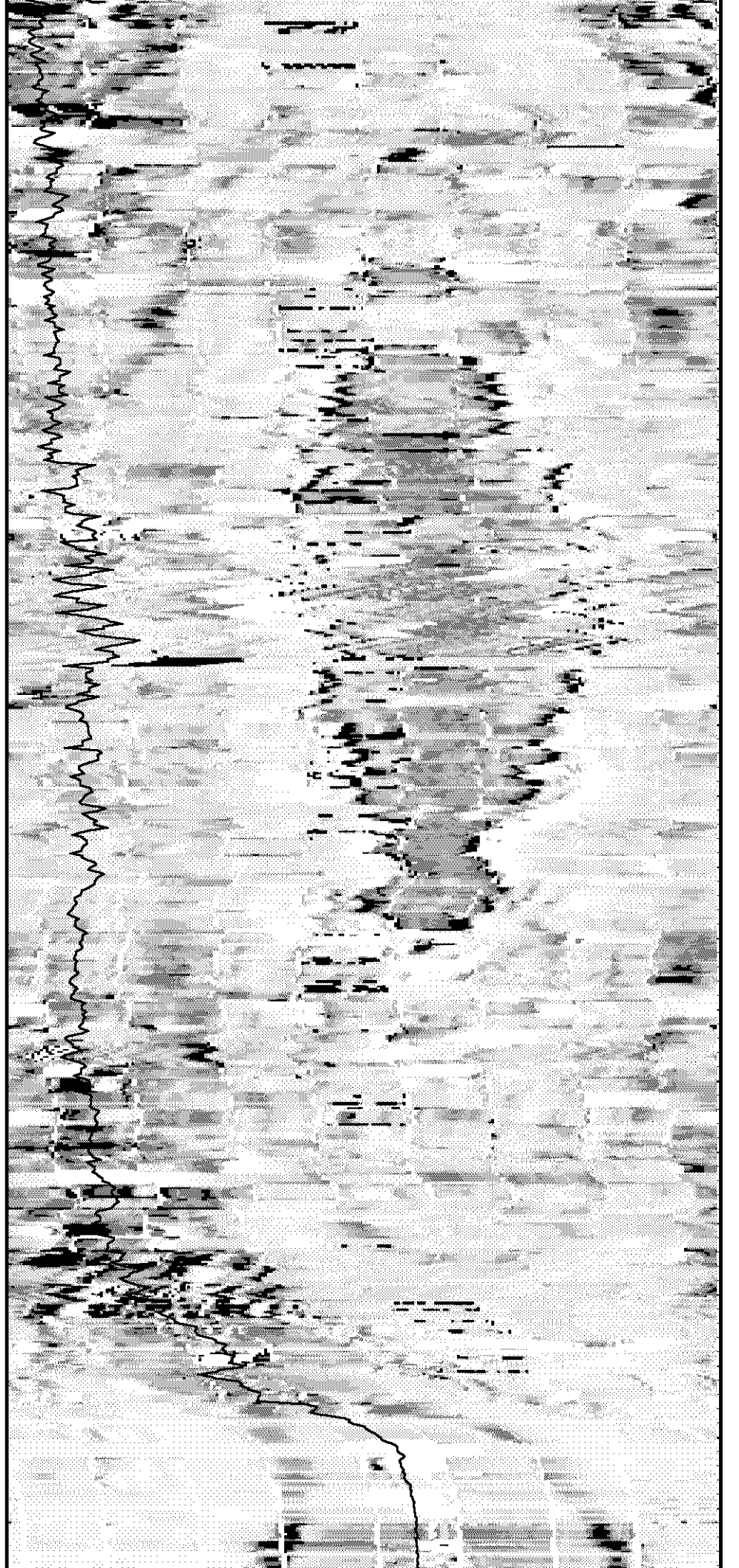
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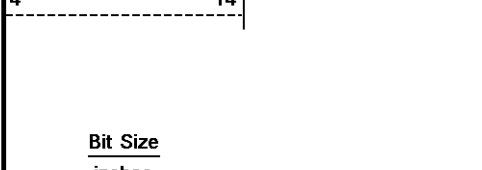
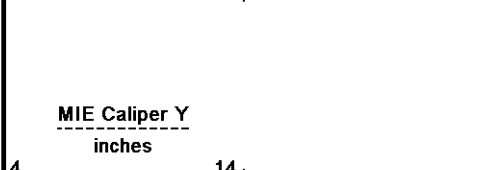
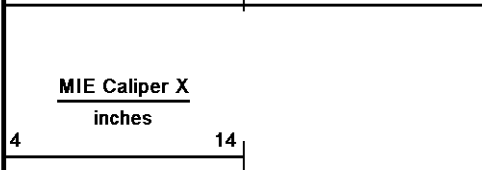
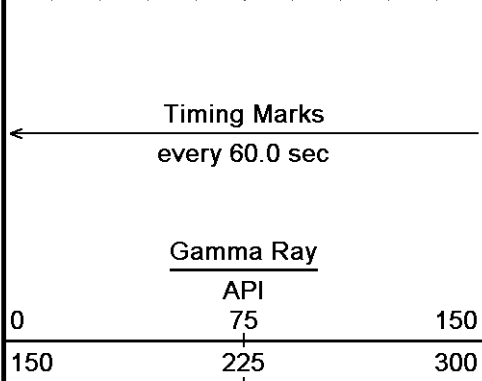
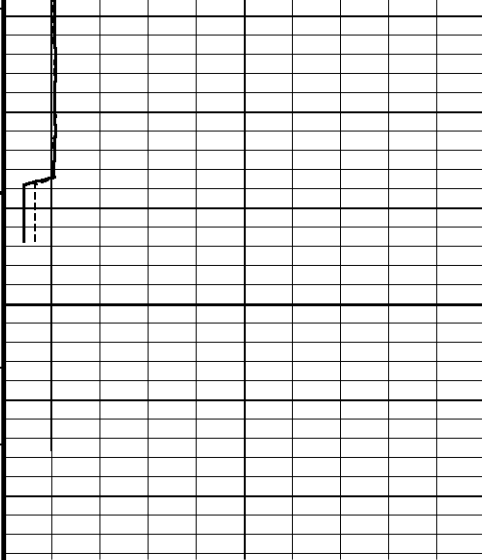
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11700

227°

11750



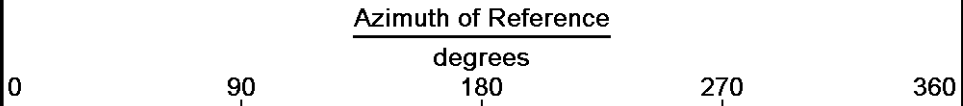
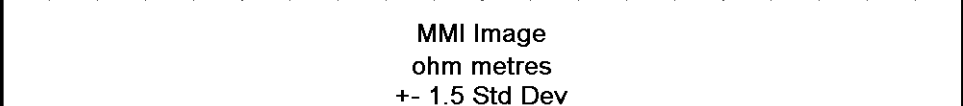
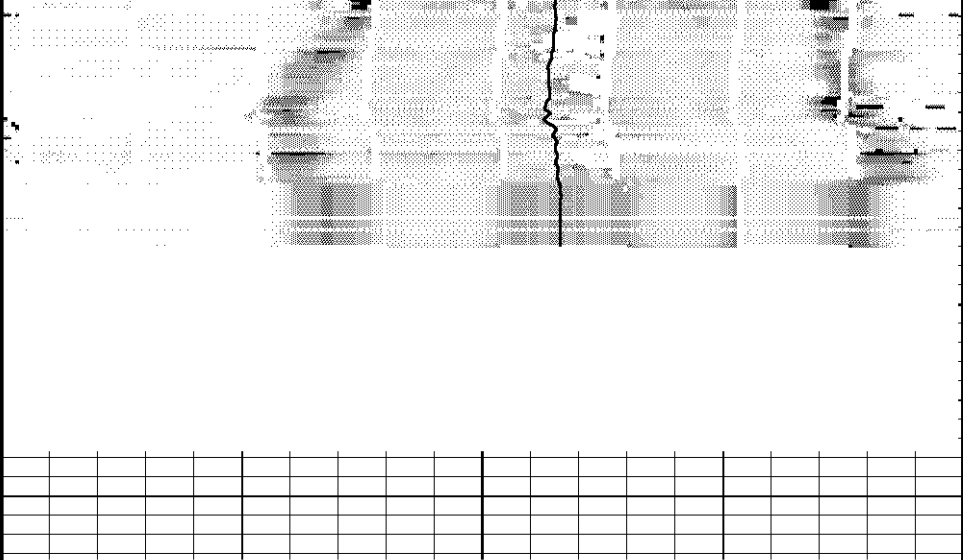


11800

11824
DSC
in
Feet

Borehole
Temp in
deg F

Replay
Scale
1:240

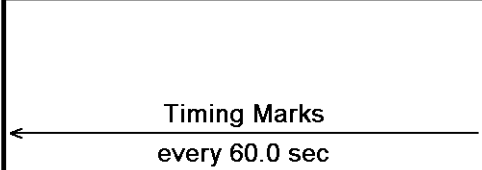


Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 02-JUL-2010 10:10
 Filename: C:\DOCUME~1\sailey\LOCALS~1\Temp\Weatherford ... \EOG Critter Creek 2-03H_Final.dta
 Recorded on 30-MAR-2010 11:28
 System Versions: Logged with 10.07.0791 Processed with 10.07.0791 Plotted with 8.01.0107

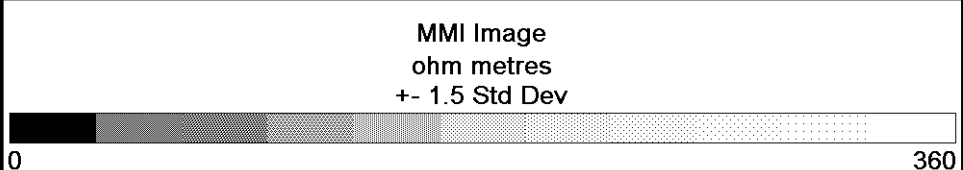
5 INCH DYNAMIC MAIN LOG

5 INCH STATIC MAIN LOG

Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 02-JUL-2010 10:10
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 Recorded on 30-MAR-2010 11:28
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Depth
In
Feet



Gamma Ray

API

0 75 150

150 225 300

MIE Caliper X
inches

4 14

MIE Caliper Y
inches

4 14

Bit Size
inches

4 14

Borehole
Temp in
deg F

Azimuth of Reference
degrees

0 90 180 270 360

Replay
Scale
1:240

7538

7550

209°

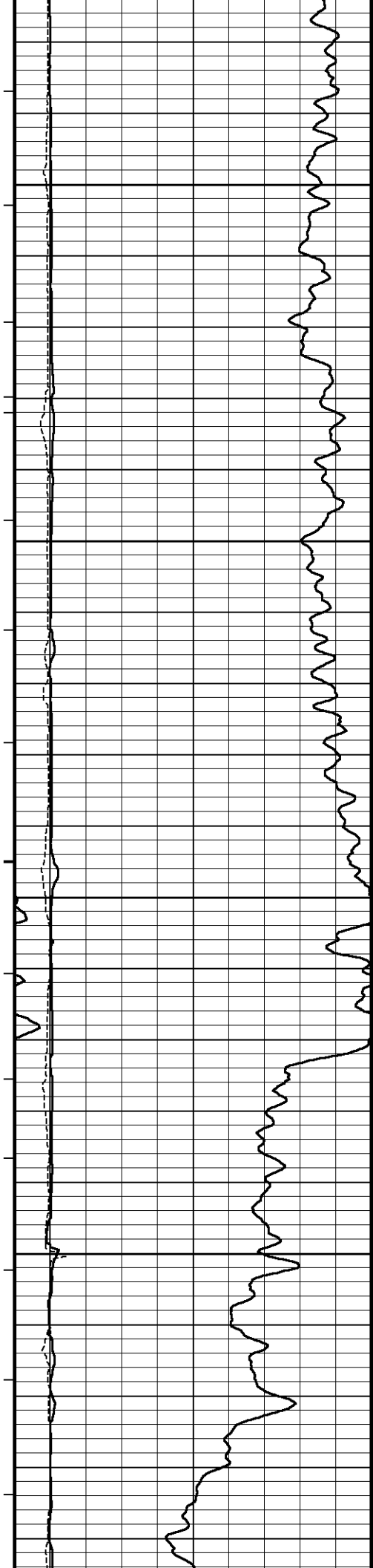
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7650

7700





210°

7700

210°

7750

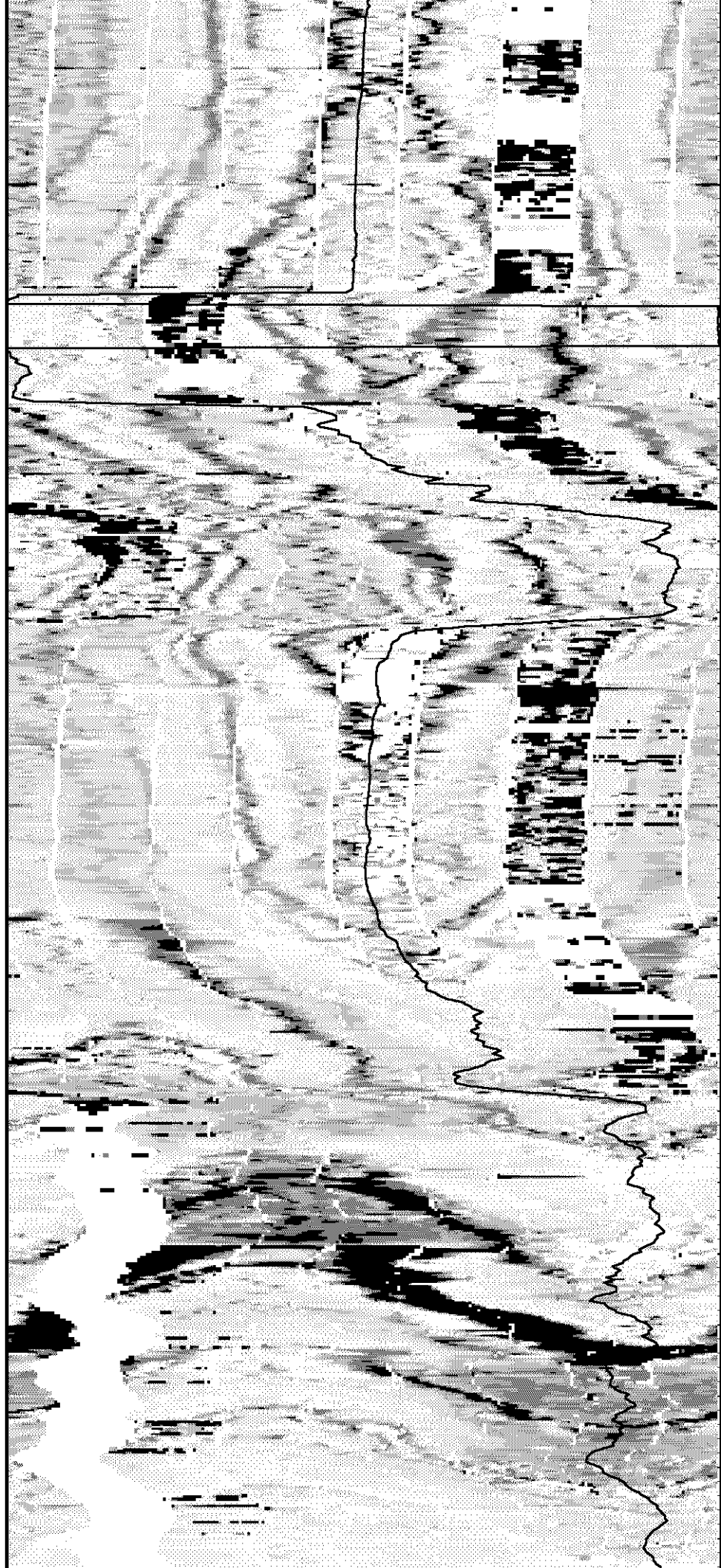
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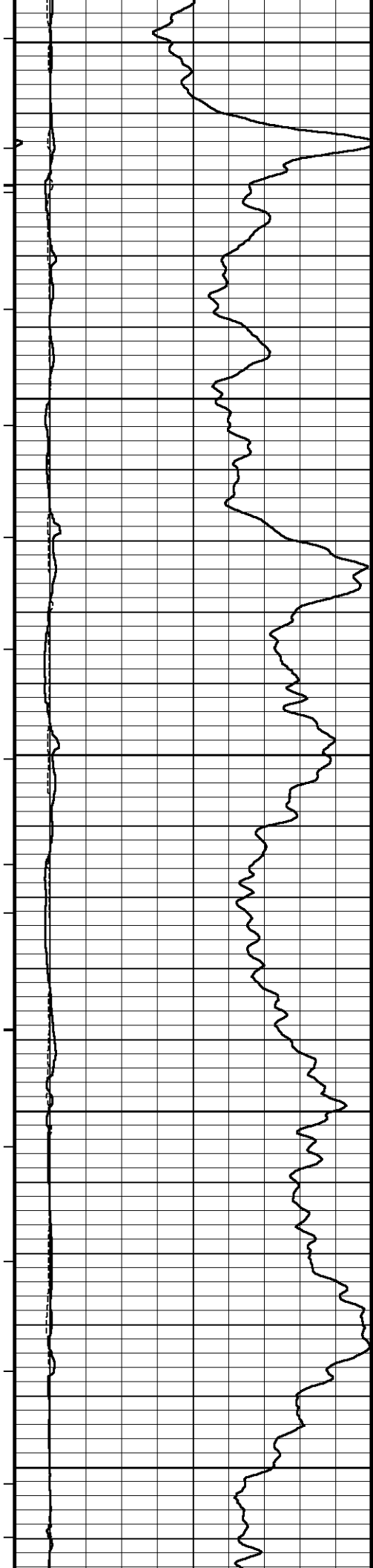
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211°

7850

211°





7900

211°

7950

211°

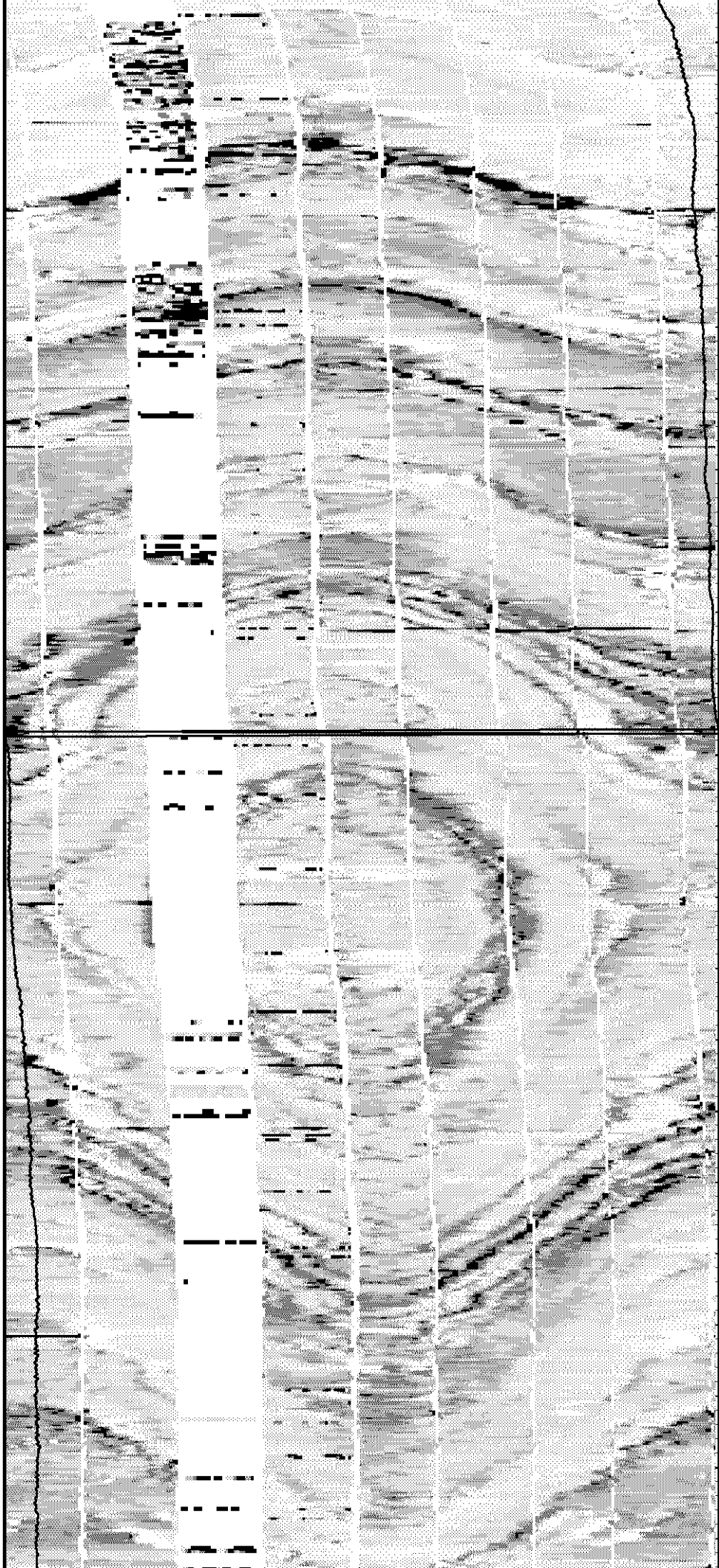
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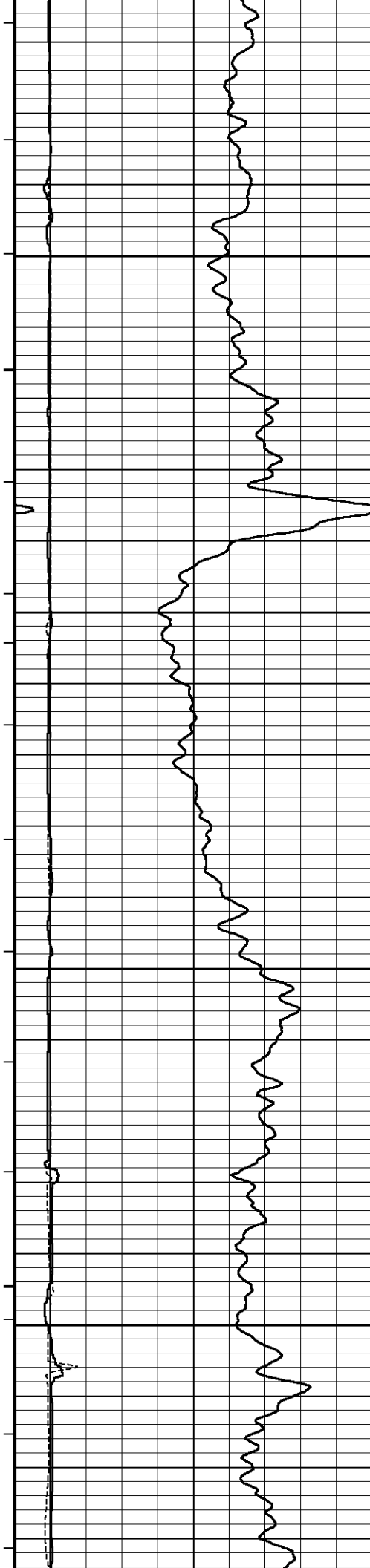
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8050

212°

8100





213°

8150

213°

8200

213°

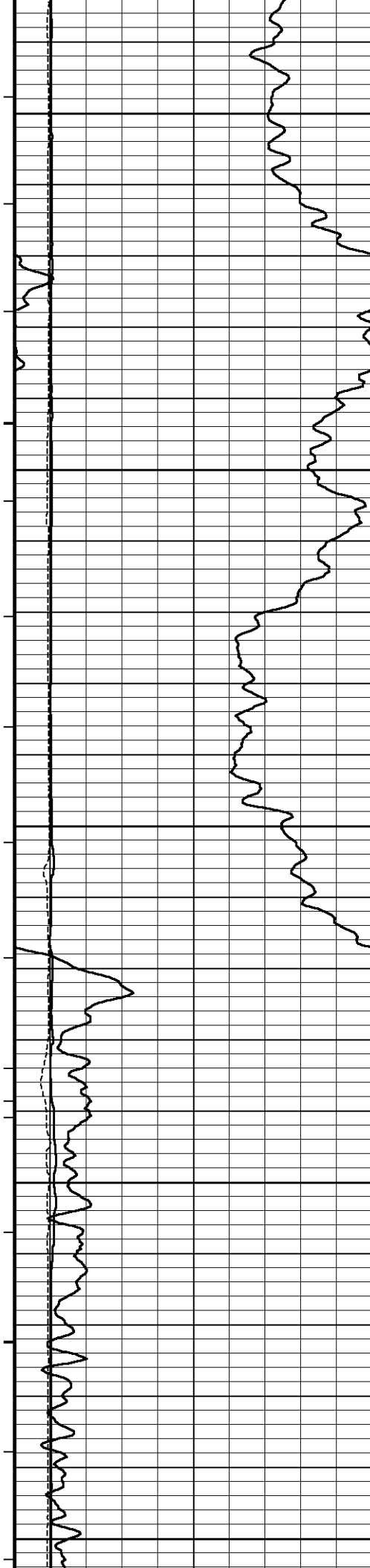
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213°

8300

214°





8350

214°

8400

214°

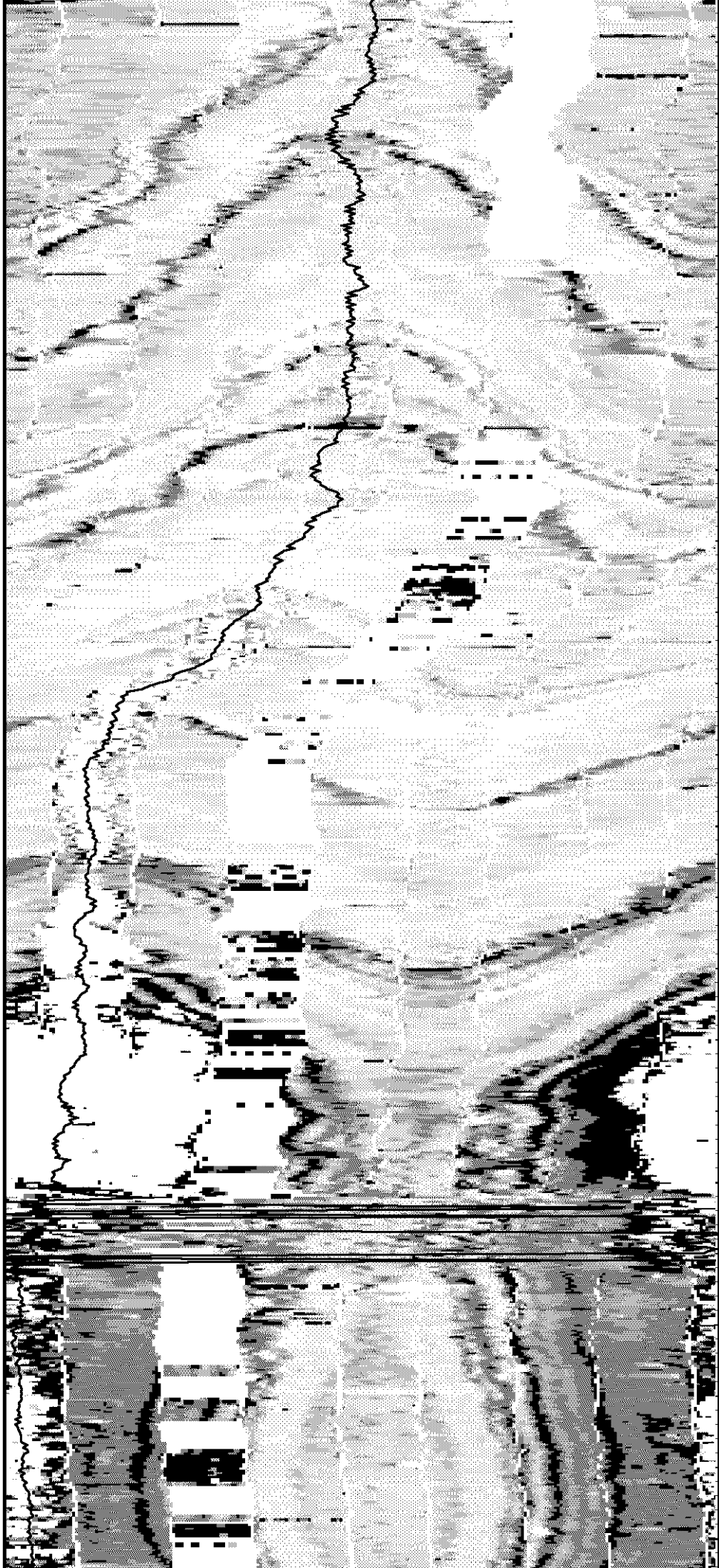
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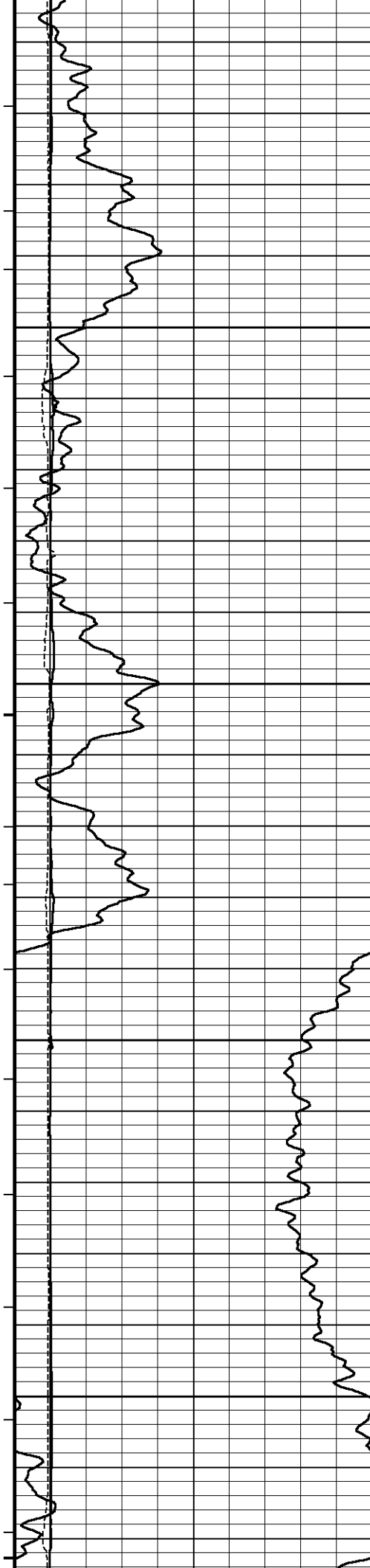
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214°

8550





215°

8600

215°

8650

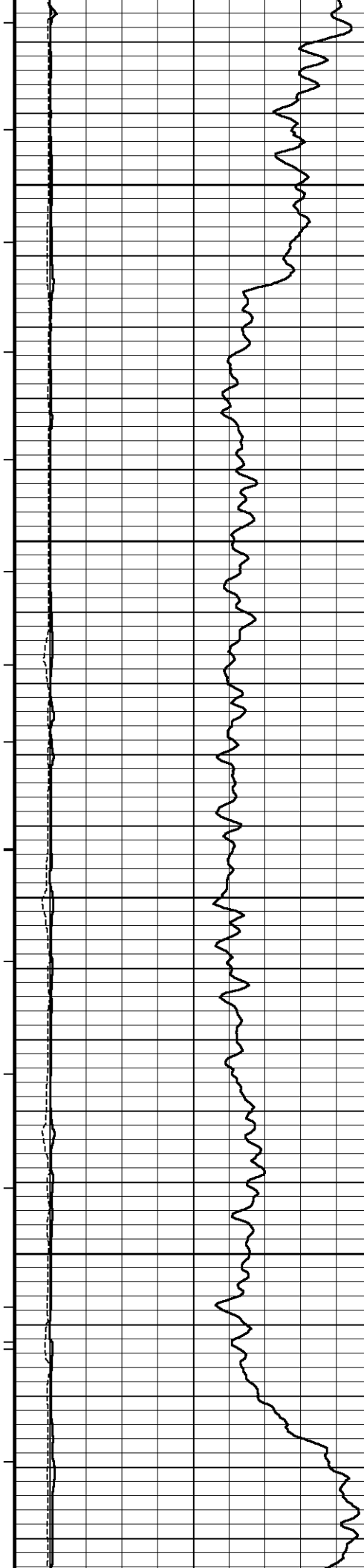
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8750





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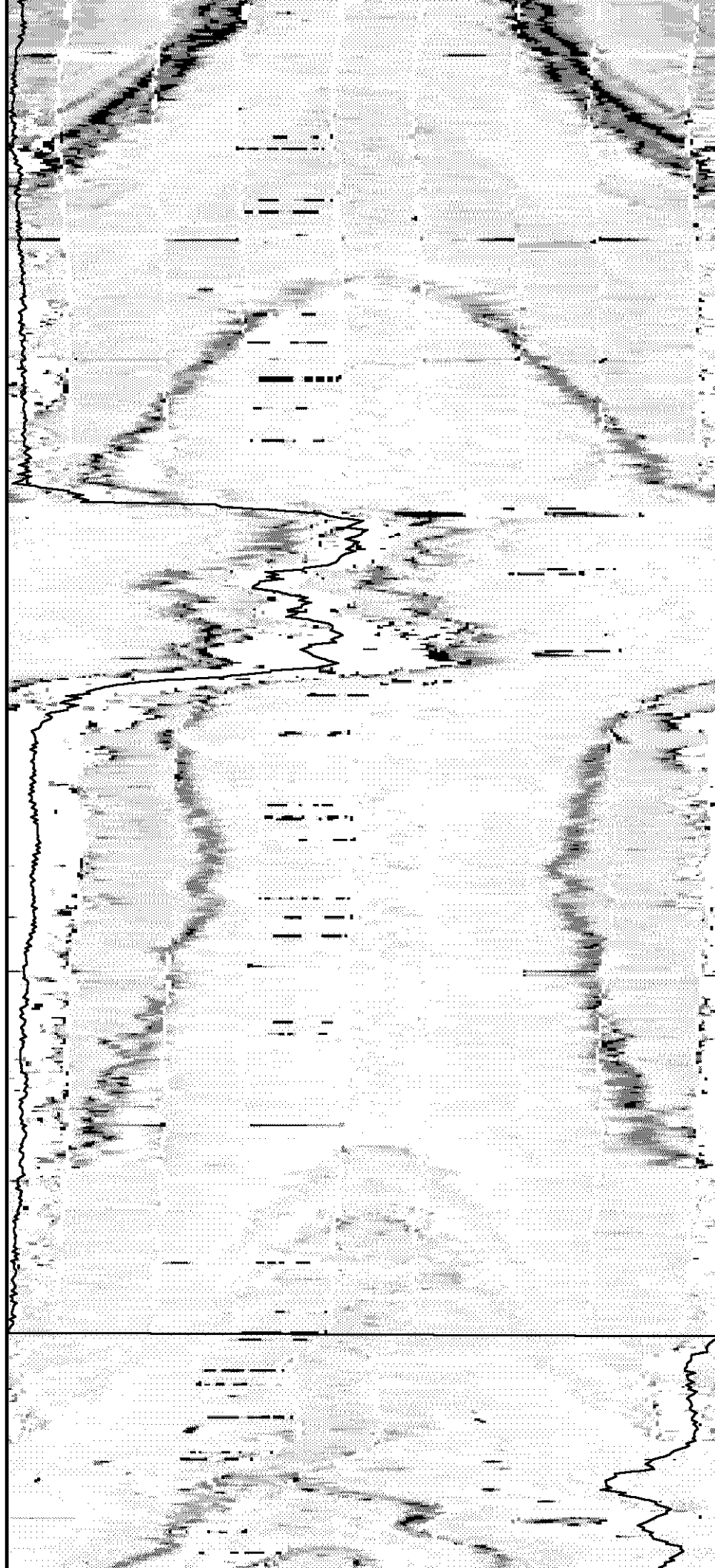
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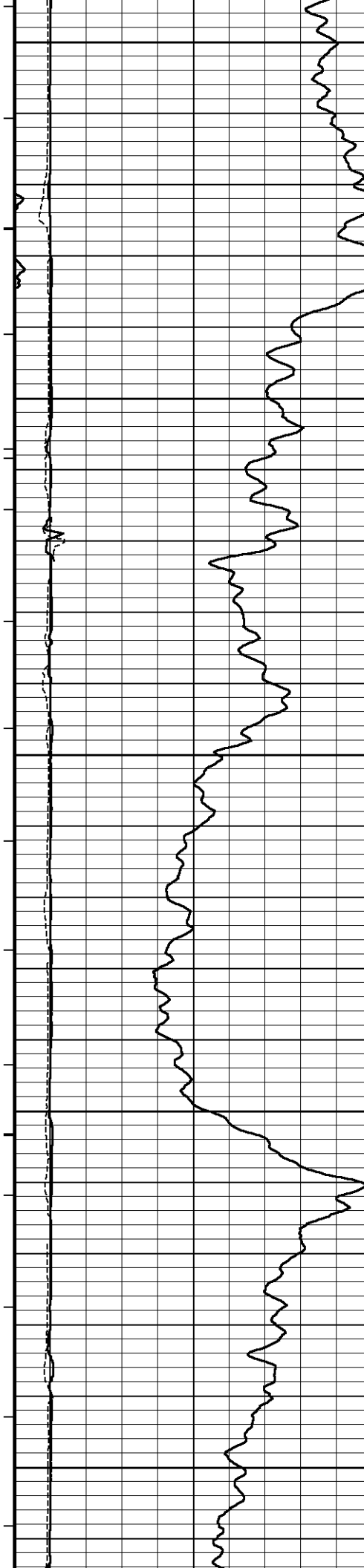
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217°

8950

217°





9000

218°

9050

218°

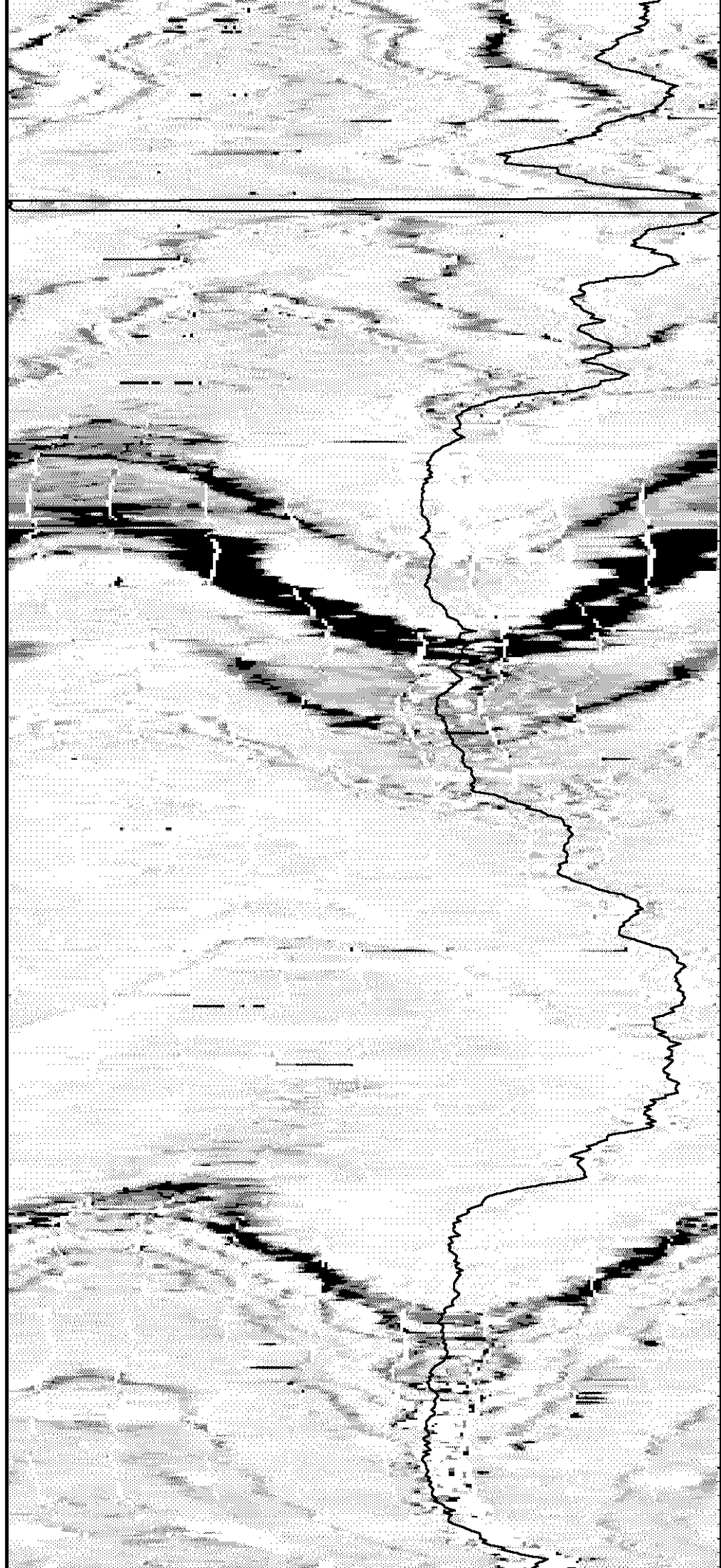
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218°

9150

218°

9200





218°

9250

219°

9300

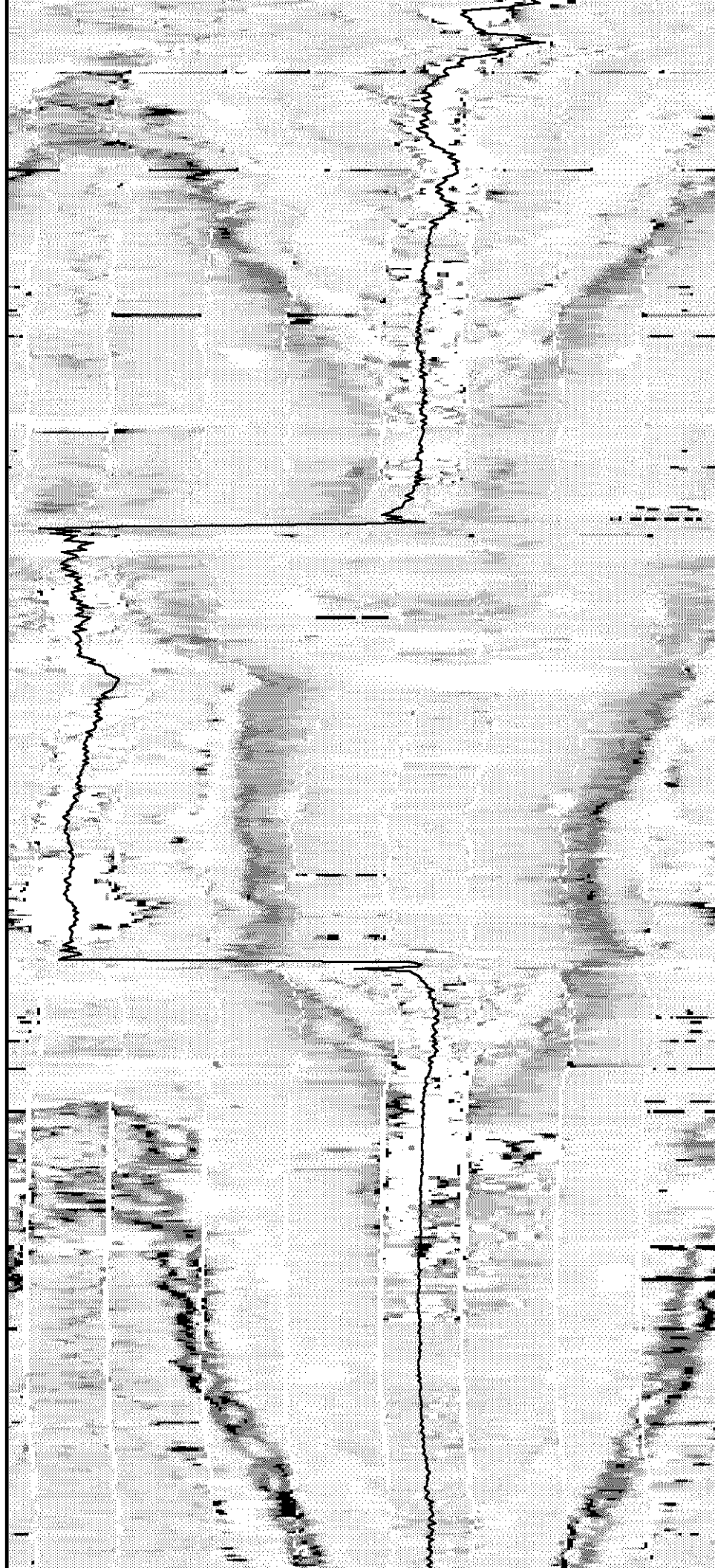
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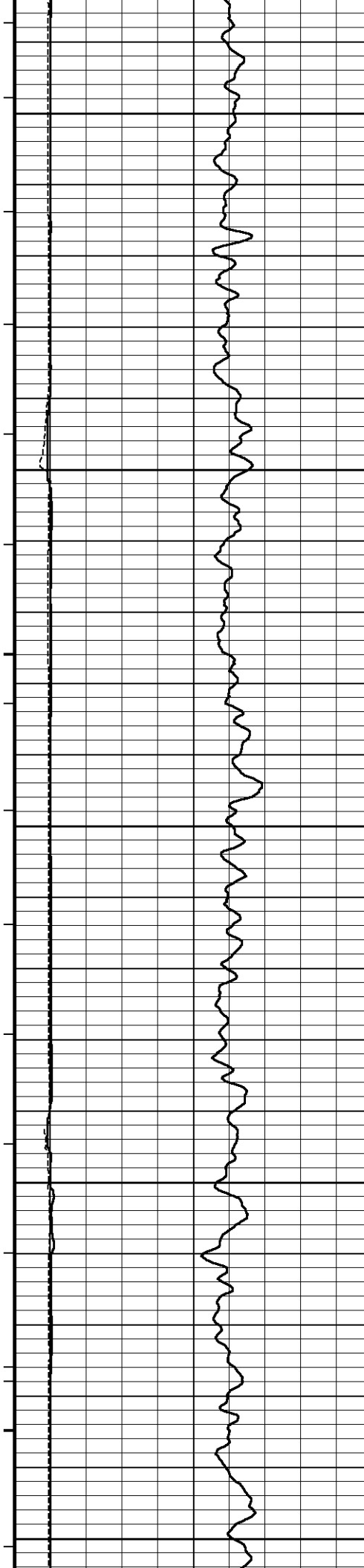
9350

219°

9400

219°





9450

219°

9500

219°

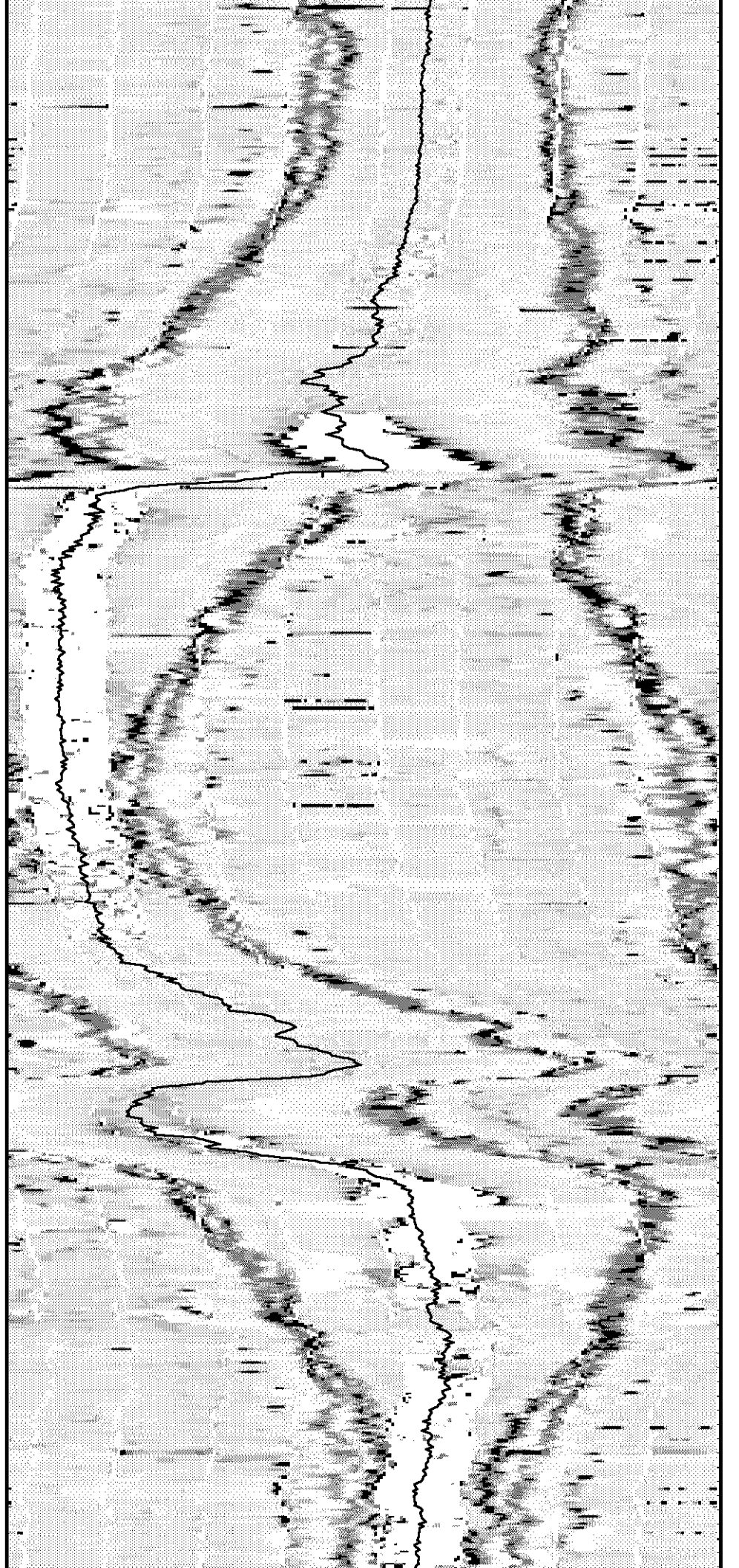
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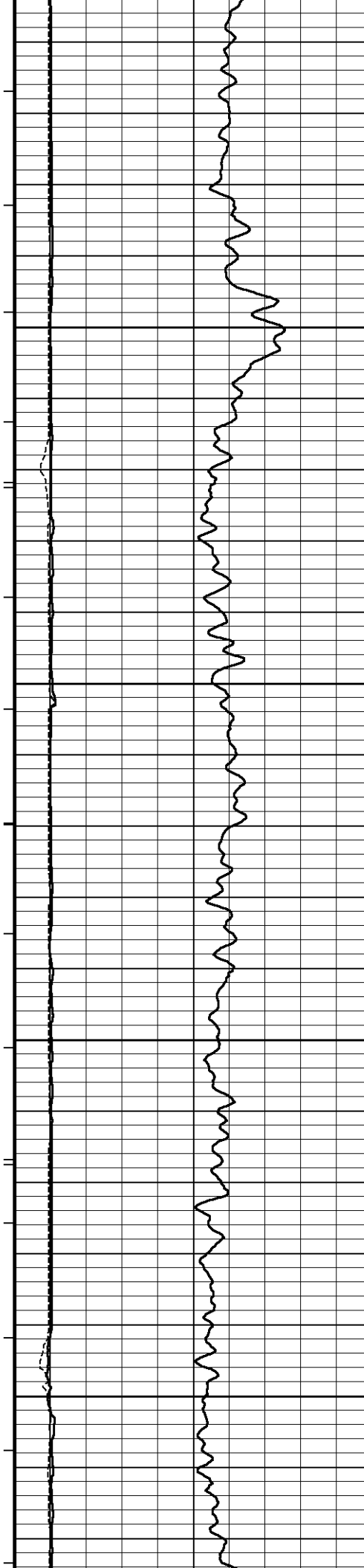
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9600

220°

9650





220°

9700

220°

9750

221°

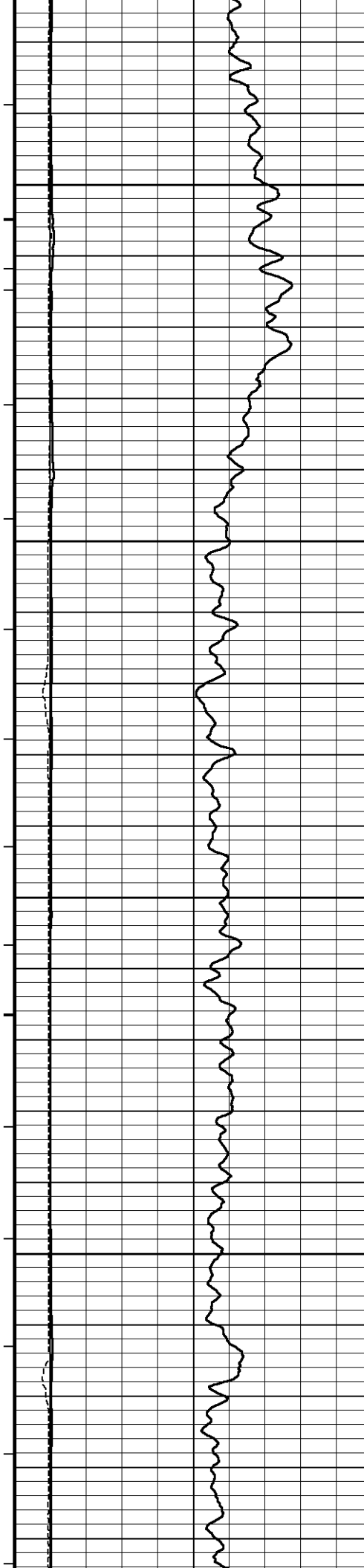
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221°

9850

221°





221°

9900

221°

9950

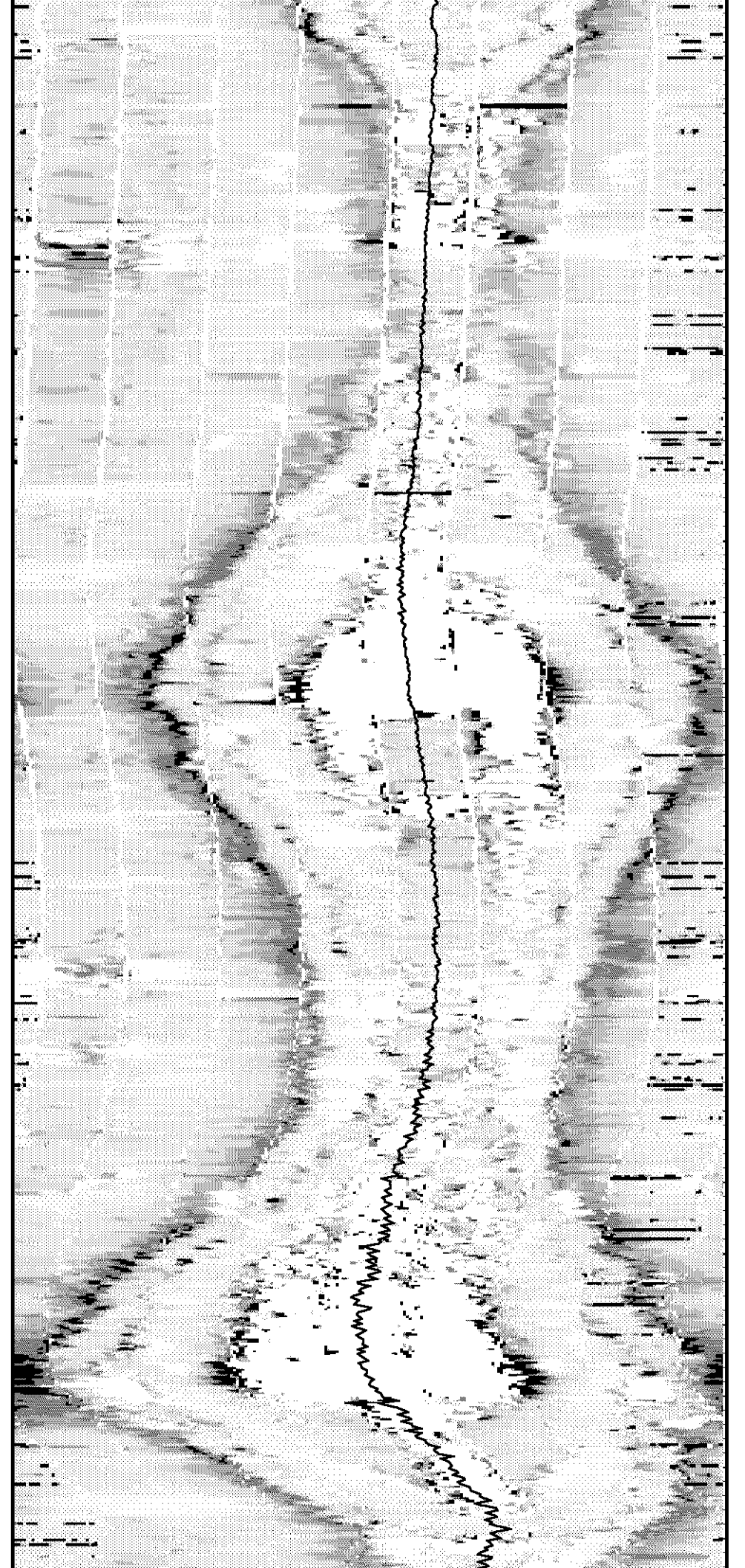
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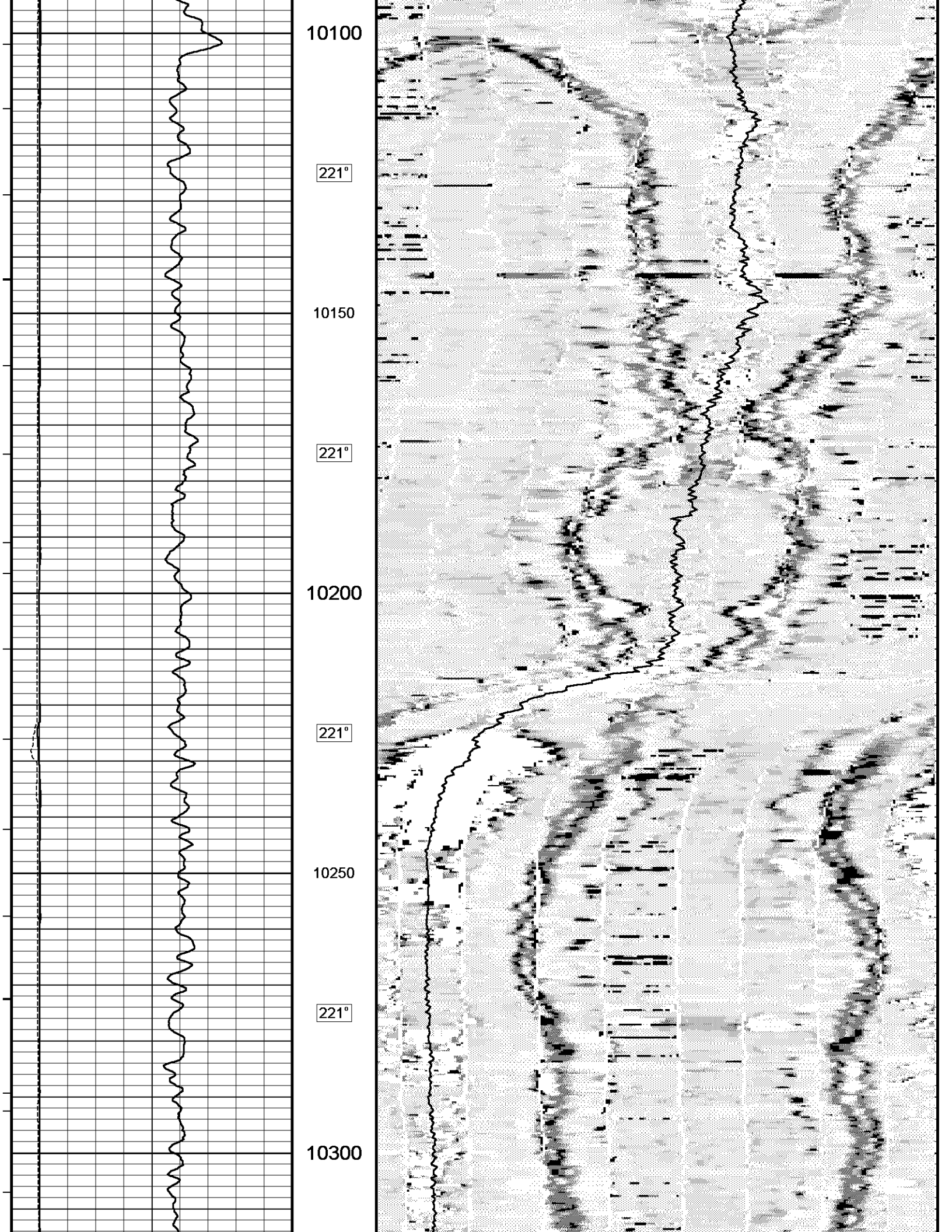
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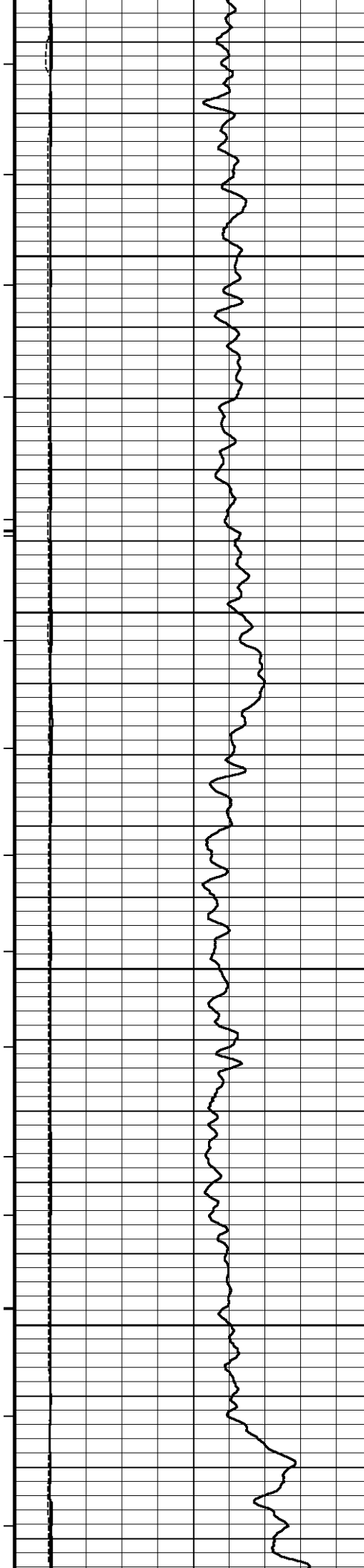
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10050

221°







221°

10350

221°

10400

221°

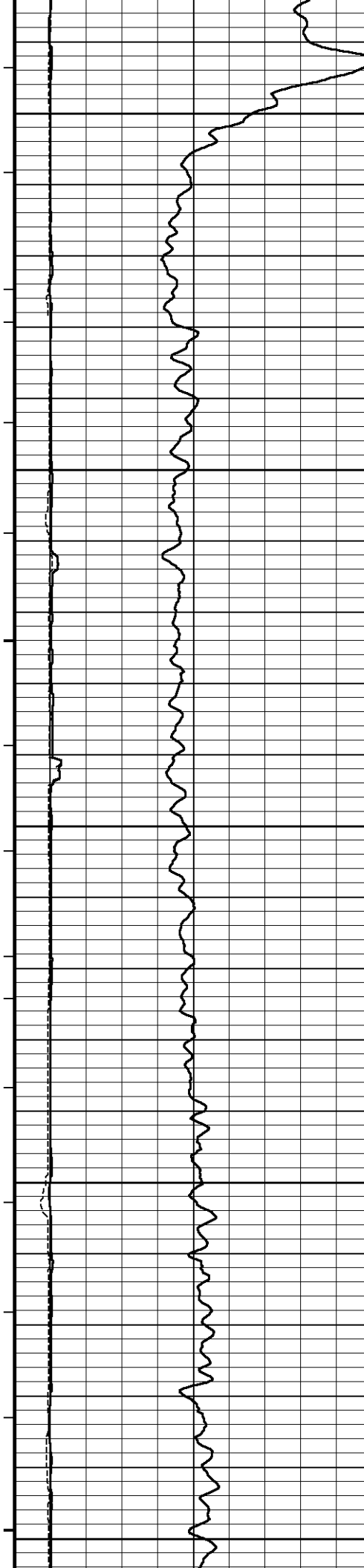
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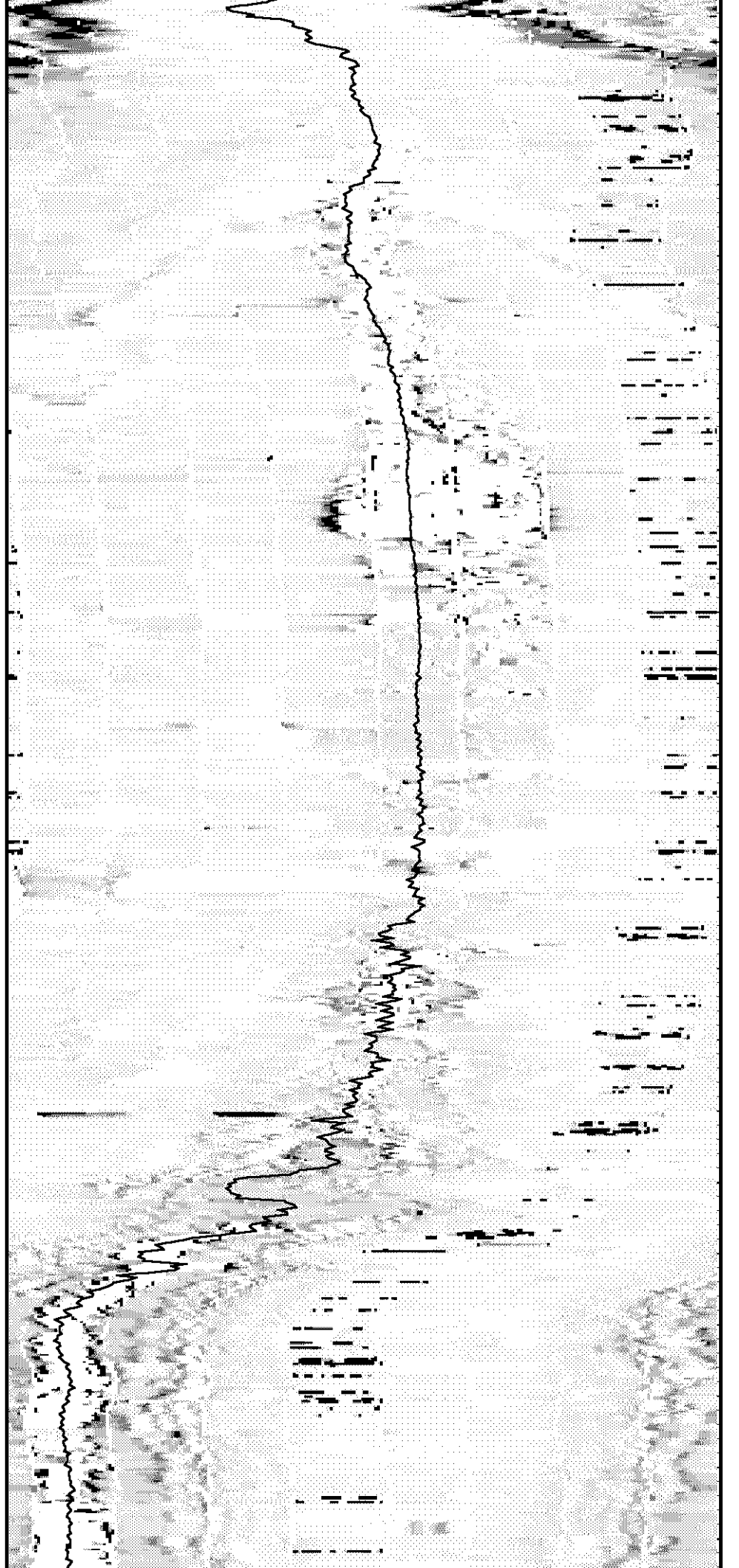
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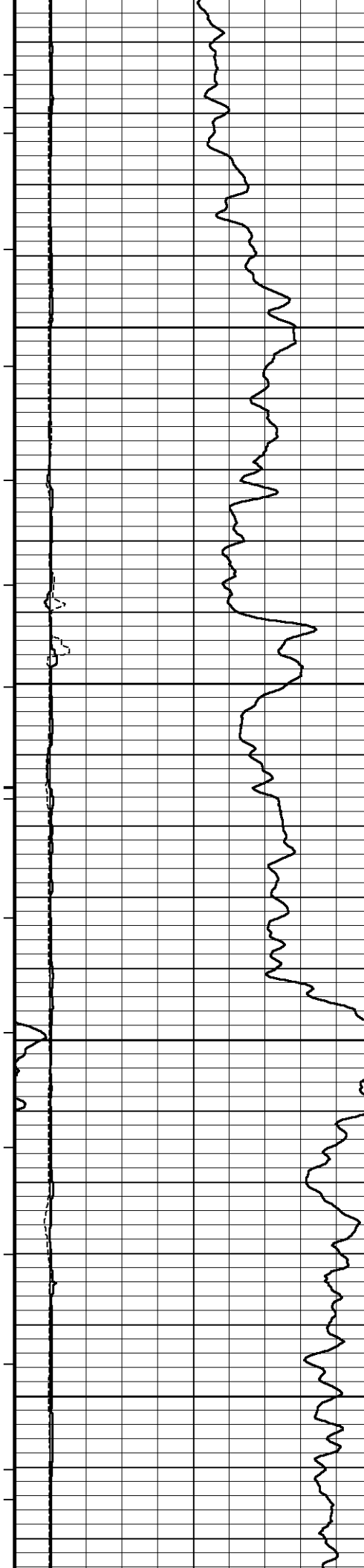
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10550
221°
10600
220°
10650
220°
10700
220°
10750





220°

10800

220°

10850

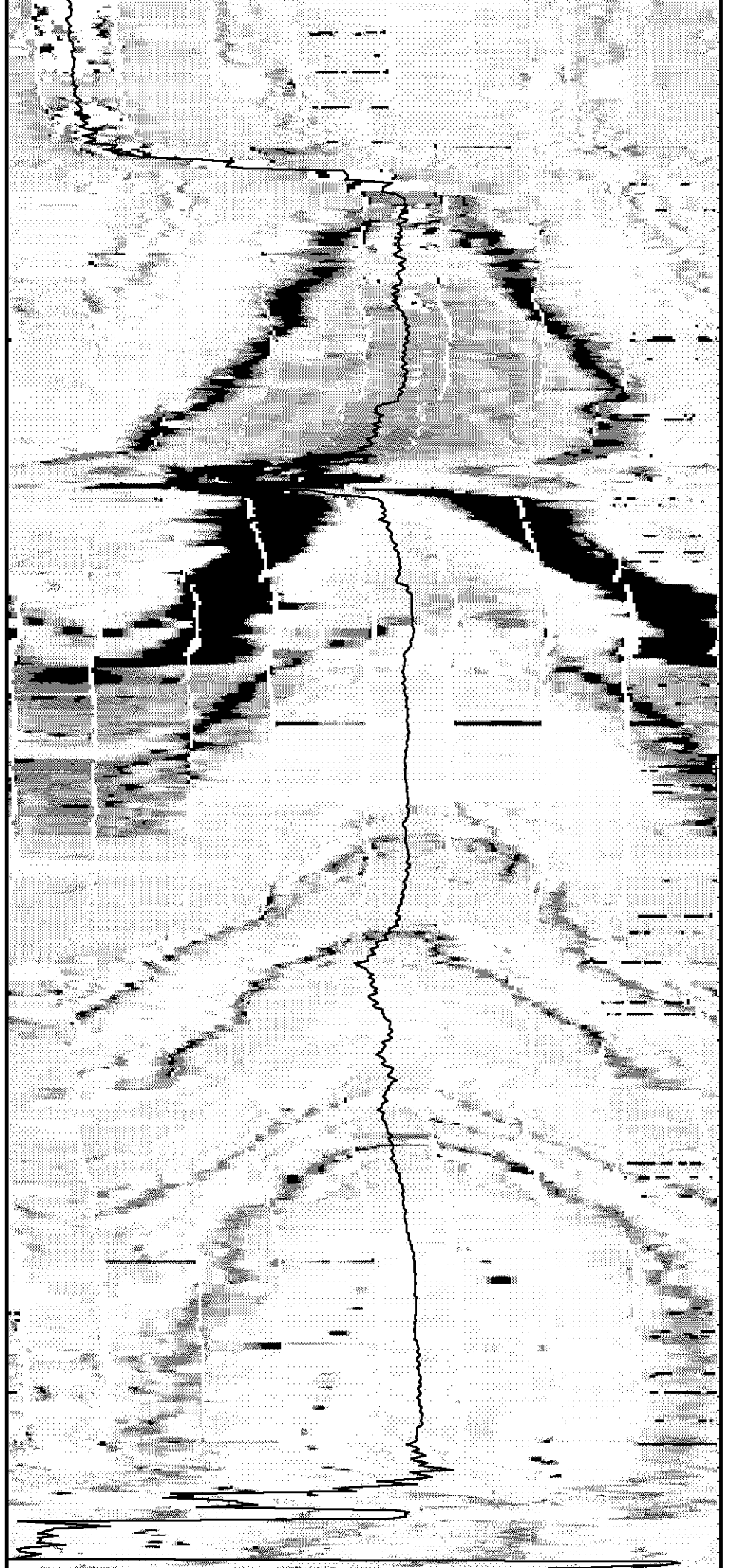
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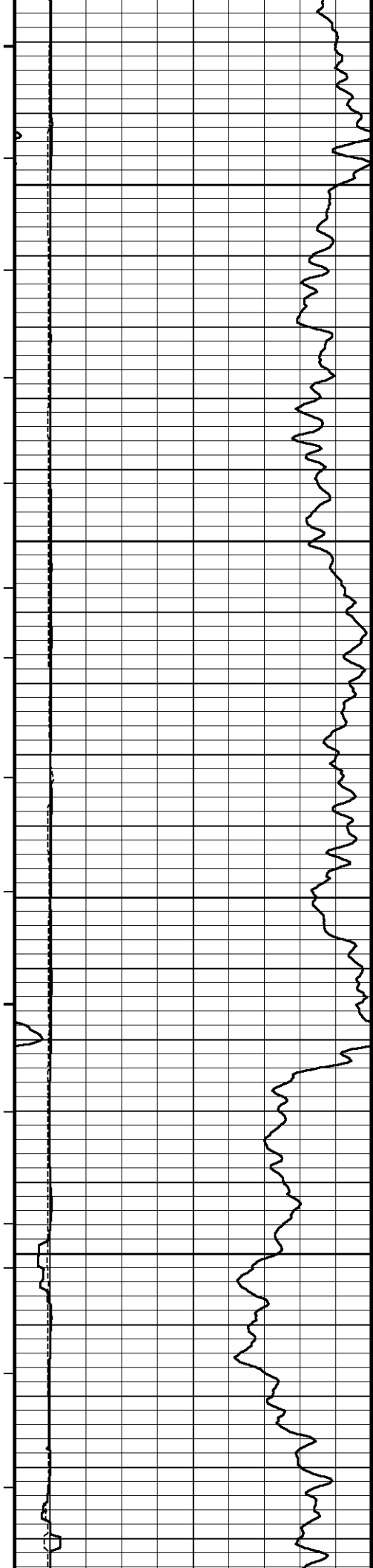
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220°

10950

220°





220°

11000

220°

11050

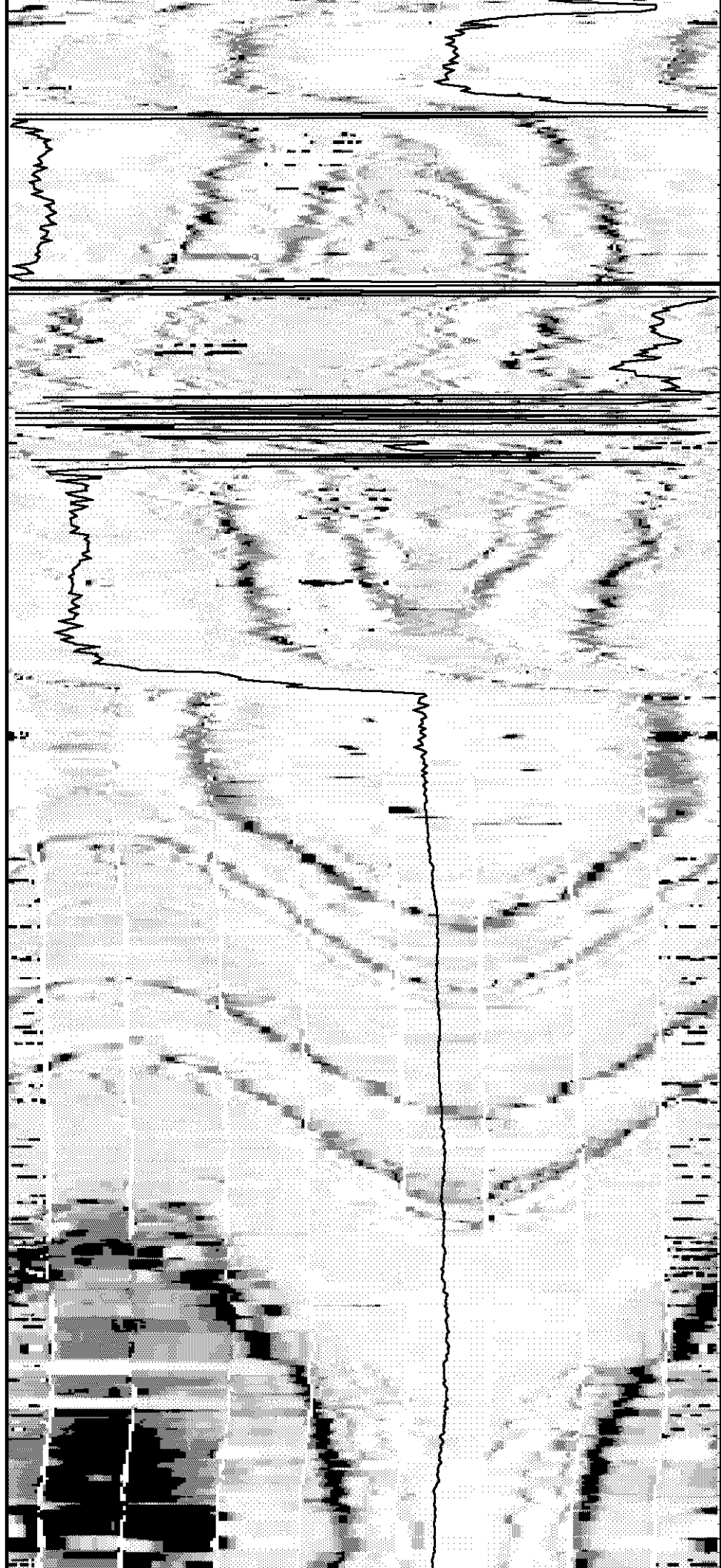
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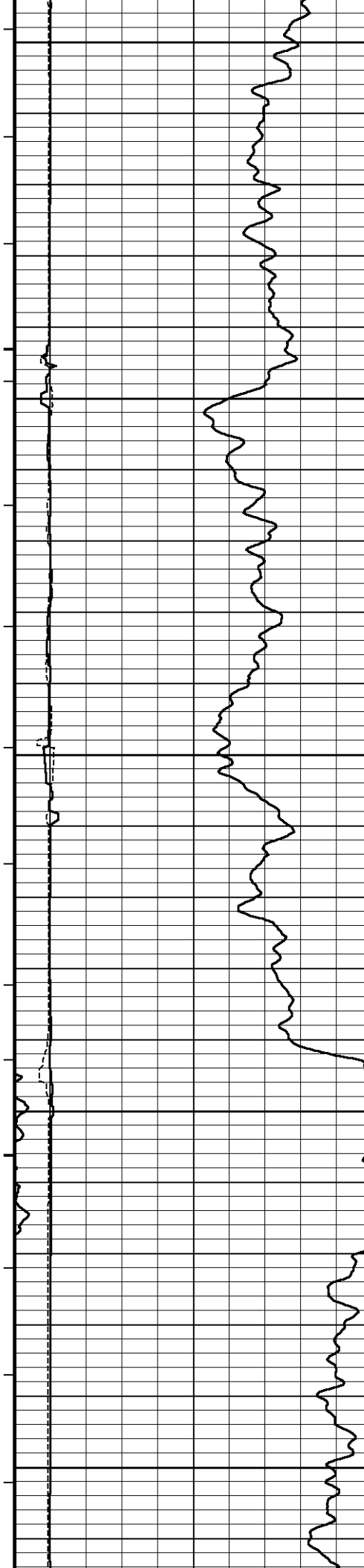
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219°

11150

219°





11200

219°

11250

219°

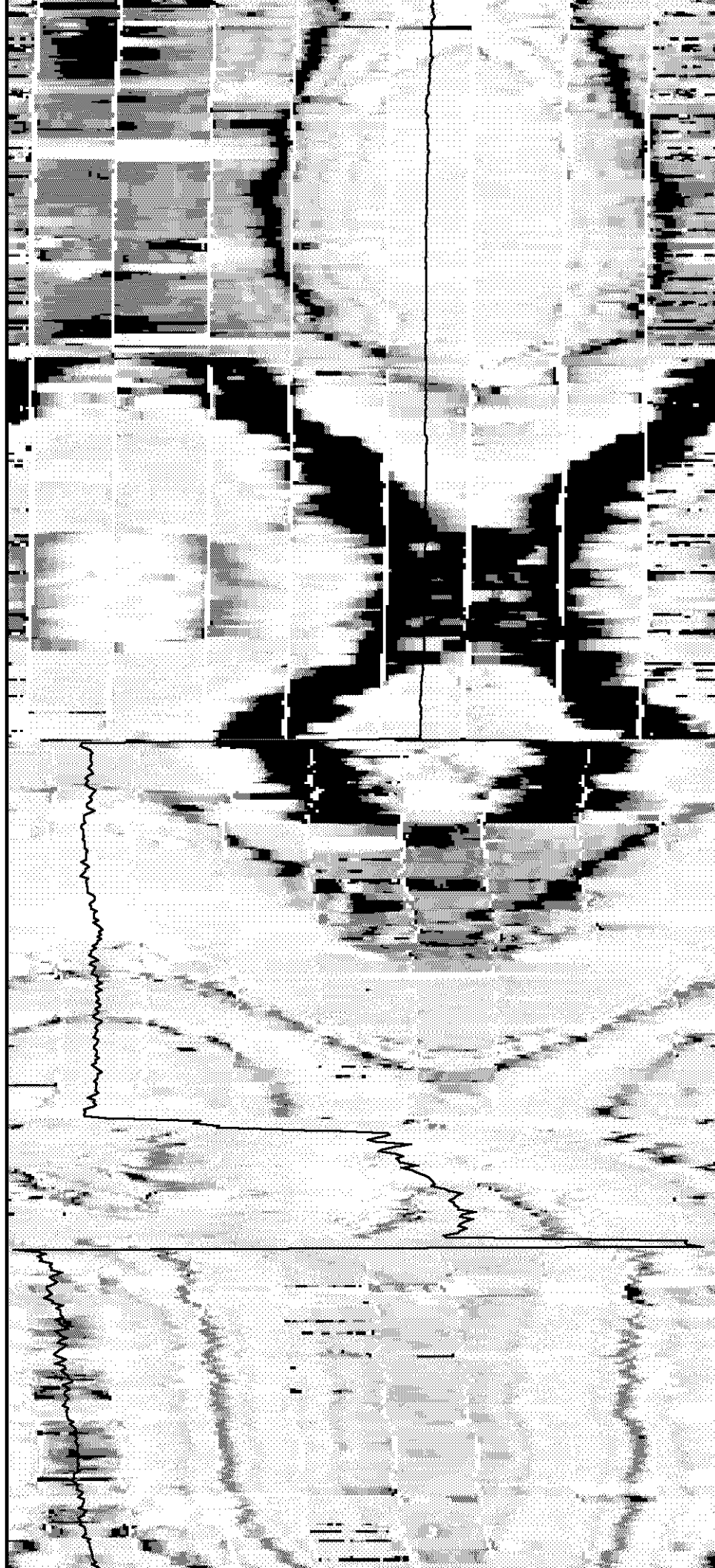
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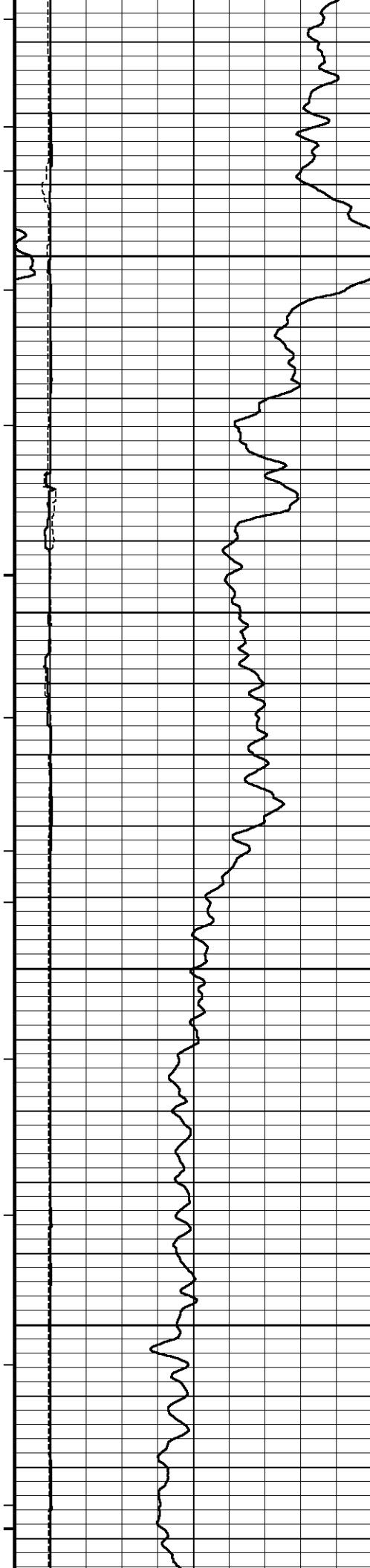
218°

11350

218°

11400





218°

11450

218°

11500

218°

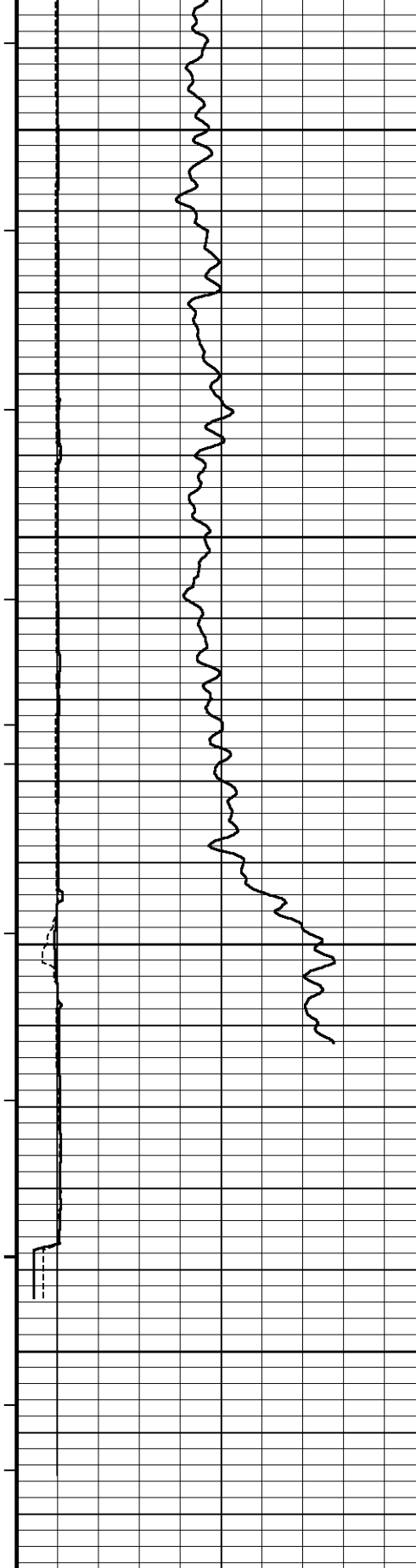
11550

218°

11600

218°





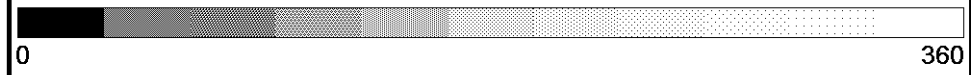
Timing Marks
every 60.0 sec

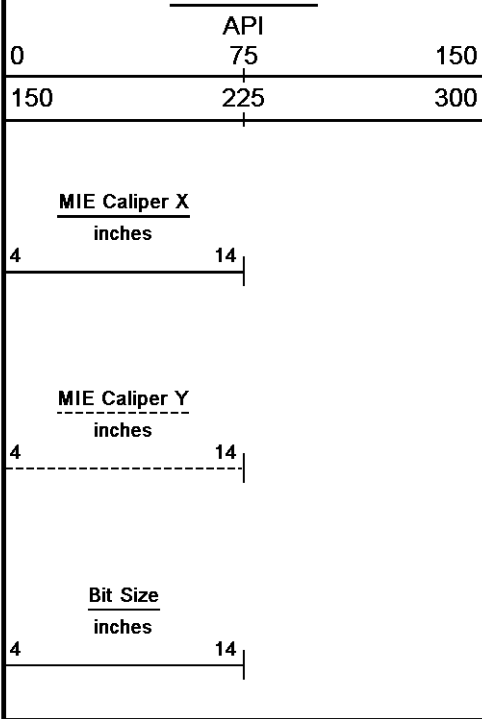
Gamma Ray

11650
220°
11700
227°
11750
11800
11824
Depth
In
Feet

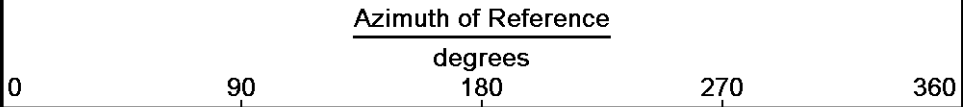


MMI Image
ohm metres
+- 1.5 Std Dev





Borehole
Temp in
deg F



Replay
Scale
1:240

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 02-JUL-2010 10:10
 Filename: C:\DOCUME~1\sailey\LOCALS~1\Temp\Weatherford ... \EOG Critter Creek 2-03H_Final.dta Recorded on 30-MAR-2010 11:28
 System Versions: Logged with 10.07.0791 Processed with 10.07.0791 Plotted with 8.01.0107

↑ 5 INCH STATIC MAIN LOG ↑

BEFORE SURVEY CALIBRATION

C:\DOCUME~1\sailey\LOCALS~1\Temp\Weatherford PreView0\EOG Critter Creek 2-03H.dta

General Constants All 000 Last Edited on 29-MAR-2010,21:52

General Parameters

Mud Resistivity	3.830	ohm-metres
Mud Resistivity Temperature	79.200	degrees F
Water Level	0.000	feet
Density/Neutron Processing	Wet Hole	

Hole/Annular Volume and Differential Caliper Parameters

HVOL Caliper 1	MIE Caliper X	
HVOL Caliper 2	None	
Annular Volume Diameter	4.500	inches
Caliper for Differential Caliper	None	

Rwa Parameters

Porosity used	N/A
Resistivity used	N/A
RWA Constant A	N/A
RWA Constant M	N/A

Down-hole Tension Calibration SMS 000 Field Calibration on 04-MAR-2010 10:17

Reading No	Measured	Calibrated (lbs)
1	15762.19	0.00
2	16827.90	410.00

High Resolution Temperature Calibration MCG 243 Field Calibration on 12-MAY-2009,12:21

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	75.00	75.00

High Resolution Temperature Constants MCG 243

Pre-filter Length	11
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SP Calibration MCG 243

	Measured	Calibrated (mV)
Reference 1	101.6	100.1
Reference 2	-98.6	-100.1

Gamma Calibration MCG 243

Field Calibration on 18-MAR-2010 10:45

	Measured	Calibrated (API)
Background	75	51
Calibrator (Gross)	966	657
Calibrator (Net)	891	606

Gamma Constants MCG 243

Last Edited on 29-MAR-2010,21:53

Gamma Calibrator Number	GRCC-153	
Mud Density	1.00	gm/cc
Caliper Source for Processing	MIE Caliper X	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

Compact Micro Imager Constants MIE 174

Centre Pad 1 Rotational Offset	0.00	degrees
Image Reference Curve	Azimuth of Pad 1	
Non Active Buttons	Omit	
Pad Drive Voltage	0	
Search Angle	45.00	degrees
Correlation Interval	1.00	feet
Correlation Step	0.50	feet
Current Offset	0.00	mAmp
Image Processing	Enabled	

Navigation Constants MIE 174

Last Edited on 29-MAR-2010,02:58

Magnetic Declination	0.00	degrees	East
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Magnetometer Parameters MIE 174

	X Magnetometer	Y Magnetometer	Z Magnetometer
Slope	-1.000000	-1.010750	-0.999300
Offset	0.009287	-0.020140	0.013025

Accelerometer Parameters MIE 174

	X Accelerometer	Y Accelerometer	Z Accelerometer
Slope	-1.108610	-1.104030	-1.096720
Offset	0.005796	-0.001009	0.012654

Accelerometer Temperature Characterisation MIE 174

Last Edited on 23-APR-2009,07:34

X Accelerometer	Serial Number	644			
	B0	B1	B2	B3	
Bias(g)	0.00000e+000	8.97681e-006	-1.88894e-008	1.27694e-010	
	SF0	SF1	SF2	SF3	
Scale Factor(mA/g)	3.00000e+000	2.72633e-004	2.24457e-007	1.11567e-009	
Y Accelerometer	Serial Number	679			
	B0	B1	B2	B3	
Bias(g)	0.00000e+000	2.76667e-005	-1.48113e-008	9.65949e-011	
	SF0	SF1	SF2	SF3	
Scale Factor(mA/g)	3.00000e+000	2.60693e-004	5.14448e-007	-1.83309e-010	
Z Accelerometer	Serial Number	687			
	B0	B1	B2	B3	
Bias(g)	0.00000e+000	-2.68884e-005	4.88649e-009	-1.07028e-011	
	SF0	SF1	SF2	SF3	
Scale Factor(mA/g)	3.00000e+000	2.65798e-004	2.86695e-007	9.16986e-010	

Caliper Calibration MIE 174

Base Calibration on 29-MAR-2010 02:43

Field Calibration on 29-MAR-2010 02:45

Base Calibration				
Reading No	Pads 1-5 Meas.	Pads 3-7 Meas.	Calibrator Size (in)	
1	26002	26030	5.96	
2	36057	36057	7.98	
3	45512	46002	9.86	

4 53831 57387 11.88
 5 0 0 0.00

Reading No	Pad 2 Meas.	Pad 4 Meas.	Pad 6 Meas.	Pad 8 Meas.	Calibrator Size (in)
1	24806	25434	23952	24910	5.96
2	33107	33481	32211	33693	7.98
3	41006	42174	40289	41466	9.86
4	52893	49531	46917	52991	11.88
5	0	0	0	0	0.00

Field Calibration

Measured Pads 1-5 Caliper(in)		Measured Pads 3-7 Caliper(in)		Actual Caliper(in)	
5.92		5.91		5.96	
Measured Pad 2 Caliper(in)	Measured Pad 4 Caliper(in)	Measured Pad 6 Caliper(in)	Measured Pad 8 Caliper(in)	Actual Caliper(in)	
2.94	2.92	2.96	2.99	5.96	

High Resolution Temperature Calibration MAI 289

Field Calibration on 19-NOV-2008,15:30

	Measured	Calibrated(Deg C)
Lower	10.00	10.00
Upper	100.00	100.00

High Resolution Temperature Constants MAI 289

Pre-filter Length 11

Induction Calibration MAI 289

Base Calibration on 10-MAR-2010 15:29
 Field Check on 29-MAR-2010 02:34

Base Calibration

Test Loop Calibration Channel	Measured		Calibrated (mmho/m)	
	Low	High	Low	High
1	16.7	472.3	9.3	966.2
2	5.8	381.9	7.6	821.4
3	3.2	261.2	5.2	566.0
4	1.9	138.0	2.6	279.2

Array Temperature 76.1 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	13.1	3831.6	12.7	3835.6
2	30.7	3517.8	30.6	3521.5
3	28.8	3017.9	28.8	3021.1
4	18.9	1995.4	18.9	1997.4
Deep	16.6	1911.2	16.6	1913.2
Medium	43.0	4035.8	43.1	4040.1
Shallow	47.2	5277.4	47.0	5282.9

Array Temperature 56.2 48.6 Deg F

Induction Constants MAI 289

Last Edited on 29-MAR-2010,21:52

Induction Model	RtAP-WBM
Caliper for Borehole Corr.	MIE Caliper X
Hole Size for Borehole Correction	N/A inches
Stand-off	0.00 inches
Number of Fins on Stand-off	6.0000
Stand-off Fin Width	0.5000 inches
Borehole Corr. Rm Source	Temperature Corr
Temp. for Rm Corr.	MCG External Temperature
Squasher Start	0.0020 mhos/metre

Borehole Normalisation

DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections

Channel 1	0.00	mmhos/metre
Channel 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre
Channel 4	0.00	mmhos/metre

Apparent Porosity and Water Saturation Constants

Archie Constant (A)	1.00	
Cementation Exponent (M)	2.00	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	100.00	percent
Resistivity of Water for Apor and Sw	0.05	ohm-m
Resistivity of Mud Filtrate for Sw	0.00	ohm-m

DOWNHOLE EQUIPMENT

C:\DOCUME~1\sailey\LOCALS~1\Temp\Weatherford PreView\0\EOG Critter Creek 2-03H.dta

Shuttle Running Tool 3.5" (SRT A)

SRT 1 Length: 0.00 ft Weight: 37.5 lb

Compact Linker

MLK 1 Length: 5.70 ft Weight: 30.9 lb

Compact Linker

MLK 2 Length: 14.24 ft Weight: 30.9 lb

Compact Linker

MLK 3 Length: 14.24 ft Weight: 30.9 lb

SKJ-D.A Compact Knuckle Joint

SKJ 66 Length: 2.17 ft Weight: 24.3 lb

MBS-A 400v Compact Battery Sub

MBS 11 Length: 14.24 ft Weight: 105.8 lb

Compact Gamma

MCG 243 Length: 8.70 ft Weight: 63.9 lb

53.98 ft GRGC - Gamma Ray
51.07 ft CGXT - MCG External Temperature

Compact Memory Sub. A.C

MMS 26 Length: 3.12 ft Weight: 22.0 lb

SKJ-D Compact Knuckle Joint

SKJ 29 Length: 2.17 ft Weight: 24.3 lb

SHA-H Compact Swivel Head Adaptor

SHA 142 Length: 2.30 ft Weight: 22.0 lb

MIS-A.A Compact Inline Bowspring sub

MIS 23 Length: 5.70 ft Weight: 33.1 lb

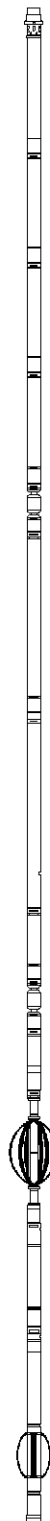
Compact MMI Memory Section

MIM 174 Length: 4.65 ft Weight: 26.5 lb

Compact MMI Electrode Section

MIE 174 Length: 13.96 ft Weight: 99.2 lb

20.92 ft IECY - MIE Caliper Y
20.92 ft IECX - MIE Caliper X
20.40 ft IMZA - Z Accelerometer
20.40 ft IMGF - Field Magnitude

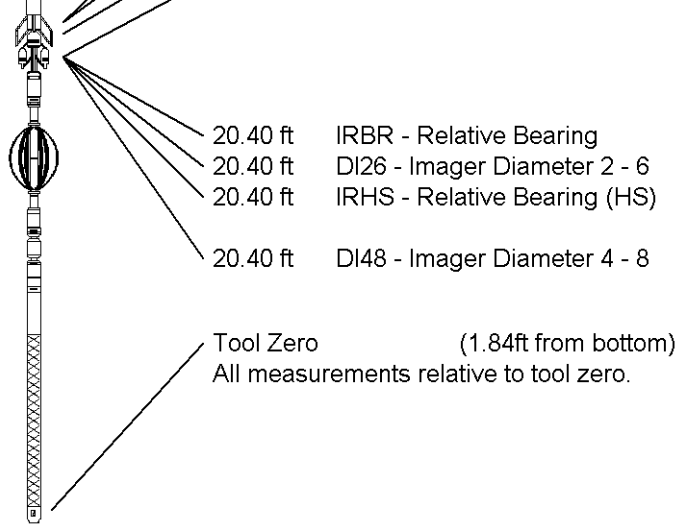


MIS-D.A Compact Inline Bowspring sub
 MIS 296 Length: 5.70 ft Weight: 33.1 lb

SKJ-D.A Compact Knuckle Joint
 SKJ 246 Length: 2.17 ft Weight: 24.3 lb

Compact Induction
 MAI 289 Length: 12.52 ft Weight: 48.5 lb

Total Length: 111.56 ft Weight: 657.0 lb



COMPANY EOG RESOURCES, INC.
WELL CRITTER CREEK 2-03H
FIELD WILDCAT
PROVINCE/COUNTY WELD
COUNTRY/STATE U.S.A. / COLORADO

Elevation Kelly Bushing	5293.00	feet	First Reading		feet
Elevation Drill Floor	5292.00	feet	Depth Driller	11845.00	feet
Elevation Ground Level	5272.00	feet	Depth Logger	11845.00	feet



Weatherford®